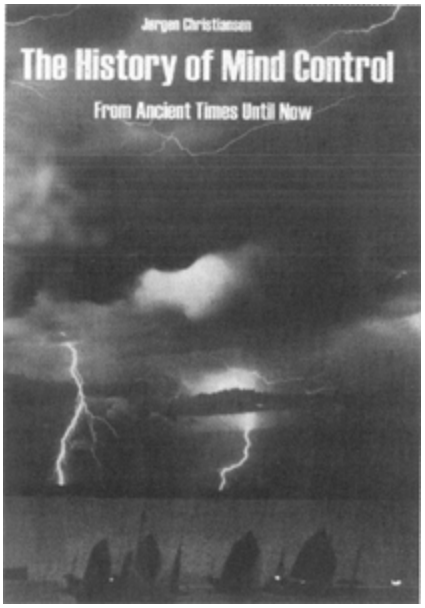
The History of Mind Control

From Ancient Times Until Now



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The History of Mind Control (From Ancient Times Until Now)

Yes, `The History of Mind Control´ is the new book every mind control fan will want to own.** Throughout the course of history the development of one essntial phase of human civilization `The History of Mind Control'** has not until now received adequate attention. This is the story of the ancient history of controlling men's minds from a distance, how long has this been going on, you get a wealth of information, arguments, sea-lore, plus descriptions of all kinds of people, and experiences - The acquisition of electricity and magnetism and their use as an instrument of power and control, was no small addititon to man's abilities. The circumstances that brought this acquisition about and the events and personalities whose efforts have revealed a force that exercised a considerable influence on medieval society remained unknown through-out history.. Scientific truth can be checked, and when it has been checked and found to conform with reality, it may be reported to us. The best information on any subject is likely to be found in books devoted to large topics, or even to other subjects. Using contemporary published descriptions of experiences, the author is able to provide full detailed account's of what people have reported experiencing, and accounts of what occurred in ancient times relating the use of electricity and magnetism to influence the psyche, an. attempt to instill 'good' that is divinily inspired. Similar feelings and inspirations informed my mind while I was working, the consicousness that what I was doing did not concern myself alone, but all of mankind. The fact in these phenomena and psychological games and investigation of them is a

worthwhile study. This new emerging knowledge reveals that what is impenetrateable to us really exists, manifesting itself in the highest wisdom, which our dull faculties can comprehend only in their most primitive forms – this knowledge and feeling is at the center of a behavioral technology which according to B.F.Skinner intends men to be happy, informed, skillful, well behaved and productive. However the goals of a democracy may be long deferred and are in conflict with the application of methods of science to human affairs. It is the intention of this book to provide historical information that will make it possible for everyone to read it.

The author’s absorbing and entertaining book, in exploring this curiously neglegted source of information, is a work of major importance and a significant step into a fascinating but largely unexplored field. There is a great deal of knowledge in this book, and you may read a bit of it, and dip back into it time and again in the years ahead.

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Acknowledgement

I claim it a rare honor to have written this monumental work. At the outset I must confess that I have special qualifications to achieve this task, and therefore could not deny it merely out of admiration for the history that I myself have been involved in. The purpose of this work is to explain briefly the development of one essential phase of human civilization which has not yet received adequate attention. The history of Mind Control, that is one of systematized positive knowledge. I am not prepared to say that this development is more important than the development of religion, or social justice, but equally important. If we have any doubts about this, it would suffice to ask ourselves what constitutes the essential difference between our and earlier civilizations and interpretation of historical events. The center of gravity of their thought was not necessarily different than ours. In tracing its history I have taken as the central theme the evolution of the science of electricity and magnetism, and what men have reported at different times that apply to the title, a long and fascinating story. The acquisition of electricity and its use as an instrument of power and control was no small addition to man’s abilities. The circumstances that brought this acquisition about and the events and personalities whose efforts have revealed a force that remained unknown throughout the earlier millenia. Cicero, Pliny and others have referred to the Etrusians who, about 600 B.C, were able to draw lightning from the clouds. We learn from others that the Temple of Solomon may have been protected by means of electricity drawn from the atmosphere. We learn that the people of Dendera were experts with the use of electricity. We set precedence in little known scientific knowledge about the

history of electricity and magnetism. After the rise of Islam, in the early part of the seventh century, we are made aware of a secret that has remained hidden for years, the power of the magnet to generate electricity. By some strange concatenation of circumstances men were brought to believe that a number of theological statements were absolutely certain. They have understood it only with their minds, it has not yet sunk into their hearts. The knowledge we obtain by our erring senses and our infirm minds is essentially fragile. If we fail to supply proof our survey would be unclear, untrue and deceiving. I have freely quoted actual works of scholars of the past in order to bring their thoughts as vividly as possible to the reader. How did it come to pass that some Greek philosophers managed to distinguish scientific issues and to discuss them with clarity, directness, and freedom which remains almost unequaled in modern times. Where did they get the genius for striking the nail on the head? When we speak of the Greek miracle we do not hesitate to repeat Lucretius's invocation to Epicuros, and the Greek scientific spirit which he symbolizes – a beacon which suddenly appeared in the darkness.

(lines are translated by H.A.J. Munro.)

"Thee who first wast able amid such thick darkness to raise on high so bright a beacon and shed light on the true interests of life„ thee I follow, glory of the Greek race, and plant now my footsteps firmly fixed in thy imprinted marks.....Thou father, art discoverer of the things, thou furnishest us with fatherly precepts, and like bees sip all things in the flowery lawns, we, O glorious being, in like manner feed from out the pages upon all the golden maxims, golden. I say, most worthy ever of endless life....At all this a kind of godlike delight mixed with shuddering awe comes over me to think that nature by thy power is laid thus wide open, is thus unveiled on every side.

The writing of this book involves a great deal of reading, which in turn involves securing the appropriate books – I thank all the people who have helped me in gathering together much of the validating material and making this book possible for everyone to read.

Copenhagen
May 2, 1999

J.Christiansen

INTRODUCTION

The oldest signs of man on earth is 2 million years old on this 4,500 million year old planet. Beginning from zero hour there was no life on earth. Subsequently fish emerged at 9:12 p.m., amphibians at 10:32 p.m., reptiles at 10:48 p.m., mammals at 11:13 p.m. and man at 11:59 and 14 seconds p.m. Modern man, however, did not show up until the last 0.8 second of the day. History after this is divided into periods on the basis of man's inventions and the arrival of metal-using civilizations. The implementation of iron and other metals began by hammering bits of natural occurring metals into the desired shape, thereafter the rapid improvement of artistic and scientific functions. Man has been tremendously inventive in developing means of harvesting and processing metals, nature itself has shown the way. With refined passion he has devised techniques which rival even modern standards. Mans brains are most suited for orientating in terrain and to remember places. Recently, in the past 12,000 years has arrived a more peaceful tool, the spinning wheel and the potters wheel. Apparently the Chinese were first to develop pedal weavery. Egyptian weaving was surpassed by Chinese silk for several thousand years. The Chinese kept silk-production a secret until a byzantium monk succeeded in smuggling silk-worm eggs out of China, where they were kept secretly for 500 years until reaching Italy. With the more permanently situated people, such as the Chinese, spinning wheels most likely arrived in early times form cotton weaving in India. The pedal freed both hands of the worker, and the modern Carousel began to turn quicker and quicker. According to 'Gilbert of Tournais' the truth is available to everyone but no one has entirely found it yet.

The ability to subject the human mind to an external influence began back in ancient days when man discovered that he could exploit human qualities of empathy and understanding in order to exert power over his fellow man, and compel the public to follow the beliefs of their leaders. The ’Meditation Fire’ was a notion probably derived from the yogistic feat, well enough attested, the ability of maintaining a high body-temperature under continued exposure to cold. Buddhism in its earliest forms was a doctrine intended for hermit monks, living in communities, and for them alone rules of discipline were formulated. Only later was the religion extended to householders and other in ordinary life. The Buddhist life in monasteries included yoga techniques, self-hypnotisation, and deep insight which was felt to be produced thereby. Supernatural powers such as materialisation of emanation forms or multiplied emanation-forms of an individual, levitation, telepathy, the rendering of the human bodies transparent, the reading of minds, invisibility, control of thermo regulatory functions of the body, and of other functions normally autonomic ect.. There in undoubtedly a basis of fact in these phenomena and physiological games and the investigation of them is a worthwhile study. They most likely served to impress ancient princes and people who might be partial to them, and to spread a cause. Consciousness was not something permanent which existed unchanged from birth to birth, but simply one form which the individual assumed at certain stages of his life. What *Li Shih-Chen* meant by the term ‘dragon-fire’ is not very clear, describing a lightning which may strike and melt without burning or singeing anything. During this time there was little point in classifying the different forms of heat and light produced by friction and impact. Not only were there observations on marsh-lights and the glowing luminous bacteria and fungi, but sparks of static electricity and electroluminence known as ‘ignis lambens’, were also noted. The *Po Wu Chih* contains an

interesting passage on this reminiscent of St. Elmo's fire, from about +290. He describes lights that stick to the ground and shrubs and trees like dew. As a rule they are invisible, but when one comes in contact with them, they sometimes cling to ones bodies and become luminous When wiped away with the hand, they divide into innumerable other lights, giving out a soft crackling noise. If a person stands still a good while, they disappear, but he may suddenly become bewildered as if he had lost his reason, and not recover before the next day. It happens when people are combing their hair, or dressing and undressing, such lights follow the comb, or appear at the buttons when they are done up or undone, accompanied likewise by a crackling sound. Turning to the luminance of preparations of artificial phosphors which may have been known in the Sung. Later an extraordinary painting is described and shown in court featuring an oxe. When viewed during the day the oxe appeared to be eating grass outside a pen, but at night seemed to be lying down inside it. The Chinese people of all people were most likely the first to make use of the 'cool' flames of natural gas on an industrial scale. Brine wells and bore-holes probably resulted in the systematic use of natural gas from the 2nd century onwards.

The ancient Greeks showed man how to use his mind. No line of thought was too much to halt Greek thinkers. Man by nature desires to know (Aristotle). In this sense the Greeks discovered the life of the mind as we understand it. They laid out all the cards and showed us how to play. The Chinese invented them. We played that game with such increasing efficiency that our life has changed more in the past 200 years than the previous ten thousand. Plato discovered methods of reaching the public, sparking an uproar and citing political exigencies. Believing the truth can be approached by reason, he discovered the rules by which the mind moves logically, step by step, from

confusion to certainty. Plato welded his political and social ideas into a single philosophical structure that has a clear and simple pattern of law and order, that the grand design is accessible to the human mind. The laws and principle are the building blocks in Plato's pyramid of ideas. At the foot of the pyramid are the properties which define all living creatures and things. Near the top are the principles of mathematics and logic. Energizing the entire Pyramid from the very top is a single idea called good, which enables knowledge to come to grips with reality. Plato thought that man is born with a spark of the divine world already in him. Everything participates in the self-contained word and mutely seeks for it and desires with longing. For the people of ancient Greece going to the theatre was a towering religious experience, with all the mystery and ritualistic grandeur to go with it. Plays were produced only once or twice a year, and on those special days the spectator had to start out very early before dawn. By the time they climbed the seats in the vast theatre the sky was aglow, and at last under the great spotlight in the sky the plays began.

To describe behavior we may picture a landscape, like describing it in terms of its component rocks, trees, bushes and grass. It is the main landmark that makes the scene meaningful, and the place to start, some by night and some by day. Impulse that resemble separate tiles in a mosaic, they pour into the senses and are sorted and assembled and the resulting design is the staff of our conscious life. The 'decision points' of the nervous system that shuffle messages, irrelevant messages coming from elsewhere, on the right route. These result from sensation, and become a thought, a feeling, and become separated into functional areas, for speech, vision, hearing and cognition, 'information theory'. The force that keeps it working is electricity. The old Pennsylvania Dutch saying, that "ve get too soon old, und too late smart". People misread the road signs, the ability to

control a hundred things at once, “that which I would I do not, that which I would not I do”. Every human being is in some way unique and generalization about humanity are subject to many qualifications and exceptions. References here to behavior should therefore be taken to mean that more often than not people react approximately the same way. Human behavior in thought, word and deed is close to being optimized, and something is being done about it. Accepting this, and leaving aside, about who should do what to whom. The questions have already been answered. Science has enabled man to control his physical environment. The technical means for self control and control of others and the ability to engineer human behavior. Pleasure is a pure fabrication that can be reproduced. It is not too early to prepare ourselves for the day when there is a behavioral science which will make it possible for mankind to pull his own strings with a high degree of precision – in a word total control - in modern terms ‘virtual reality’. A science of enormous potential importance whose social power will make all other power seem feeble, may well be in the hands of our children. Now poised between immeasurable good and incomprehensible power of destruction, we may well wonder whether we are playing the game with any understanding.

The King has note of all that they intend. By incerception which they dream not of.
William Shakespeare, *The Life of Henry V*, Act II Scene 2

(Science And Civilisation In China), Vol 4, “Physics and Physical Technology”, Cambridge 1962)

The Tao

Confucius went to see Lao Tan. Lao Tan said I hear you are a wise man from the North; have you also found the Tao?. Not yet, replied Confucius ”May I inquire how you went about searching for it?” said Lao Tan. ”I looked for it in measures and numbers but after 5 years of effort I was still not able to put my finger on it.” ”And what did you do then?” asked Lao Tan. ”I sought for it in the Yin and the Yang, but even after twelve years I did not find it,” replied Confucius. ”I am not surprised,” was Lao Tan’s response. ”If the Tao could be offered from person to person, all men would present it to their rulers; if it could be served up on a plate men would all have given it to their elders; if it could have been talked about, everybody would have told their brothers; if it could have been passed on, men would certainly have willed it to their sons and grandsons. But no one was able to do any of these things. Because if you have not got it in you, no one can give it to you...” Lao Tan knew that everyone, even Confucius, had the Tao inside – for it is untamed, and up to now an untamable element in man’s spirit.

WHO IS IN CHARGE.

To ancient man is inherent the ability to hear and to announce himself to others over distance and space. The spark discharge is one of the most fascinating phenomena in nature. Man had observed spark discharges long before he made his first attempts at understanding of them. Man possessed the desire to observe and describe natural phenomena which is the core of any activity. Motivated with practical reasoning he set out to master and exploit these resources. It was not day or night, but his whole life long, he did not rest, but turned his attention to one thing after another, until he arrived at the solution to the problem. In most of man's history it was these problems that comprised their inventions, likewise it is weapons that are still responsible for much of man's inventiveness. The first questions we ask then, about the use of any invention, is who made it and how widespread was it's use.

Nay, the same Solomon the king, although he excelled the glory of treasure and magnificent buildings, of shipping and navigation, or service and attendance, of fame and renown, and the like, yet he maketh no claim to any of those glories, but only to the glory of inquisition of truth, for so he saith expressly "The glory of God is to conceal a thing, but the glory of the king is to find it out"; as if according to the innocent play of children, the Divine Majesty took delight to hide his works, to the end to have them found out; and as if kings could not obtain a greater honor than to be God's play-fellows in that game. (The Advancement of Learning, Francis Bacon 1603)

Lightning attracted the attention of primitive people who armed some of their gods with it. To the ancients lightning

was something supernatural. The blinding light, brilliant as the sun, an arc of light between earth and sky, and tremendous roaring that has been assimilated in every culture either to a god, his weapon, or the manifestation of his sovereignity. For many centuries lightning divination was part of Roman statecraft, and about 300 B.C. the College of Augurs was entrusted with this task, to understand the true nature of the fiery thunderbolt, and to see by what power it plays its part, vainly to search for signs of the hidden purpose, penetrating through the walled places and after winning mastery how it has conveyed itself out, or what harm the stroke of a bolt from heaven can do. Giving its sense a voice that persists within the words as lightning enters a closed house, the sudden revenge of the original upon the copy imitating or sounding like silencing, the echo or erase silencing the precursor. Illuminating the brilliance of the lightning flash is returned to its proper context, as the sudden appearing in what illuminates truly, emerge as instruments and techniques of social organization, and if to “find the letter” we freely choose to “observe” it or resist, but that delusion of our “freedom” to choose one or the other suddenly, eventfully appears and is constructed with it as well. In order for the subjective agency and human will to be both “free” and “subject” swerve permanently from act to event and back and construe that “swerve” as falling into neither class of occurrences.

Lightning or thunderbolt, symbolizes a mystic energy and the adamantine weapon of truth. Rain accompanied by a thunderbolt symbolizes power or energy. Rain clouds and thunderstorms symbolized celestial activity in ancient China and lightning was regarded with the same awe as were the thunderbolts or rain gods in other cultures. The opposing forces symbolize two facets of the human spirit, the image of thunder arousing and tension resolved after a cloudburst, nature refreshed deliverance.

People of very different times and cultures have tended to “humanize” meteorological phenomena by telling stories about the displays of celestial powers. It is not the storm but the sacred power, will that the storm reveals. A thunderstorm was the signal for a furious outbreak of bell-ringing. Medieval bells were frequently inscribed ’*Fulgura frango*’ meaning ’I break the lightning’. Many bells were rung as a result of lightning striking church towers. An arch of light between the earth and the sky descending in the form of a thunderbolt destroying Titans, a god, hovering over the Roman legions jaded-city-dwellers with outspread wings and raining down his powers upon them. Supreme beings living high above our world where the winds circulate through his nostrils, lightning is the dreadful glance of his eye, thunder the joy at something he has seen, raindrops the tears he sheds. A supreme being said to produce thunder and lightning and all manner of violent and destructive weather phenomena such as volcanic eruptions. On the other hand considered a protector. Symbols derived from the phenomena of the storm thus express human kind’s deeply rooted profound anxiety that men and women have felt about the sacred powers that sustain the world, powers over which human being have little if any control. Lucrettius’s atomic explanation for the origin of lightning and thunder lists reasons not to seek to understand such heavenly accidents as causal, theological events, but as material events.

The Romans, who saw portents in it, used it to pick propitious days for elections. The rain god Jupiter hovering over the Roman legions with outspread wings and raining down his power upon them. In ancient Rome the most solemn oath was that sworn in the name of the thunderstone (Jupiter lapis, Jupiter present in the thunderstone). The stone was used when the feriales took an oath and made sacrifices upon allying themselves with a foreign power. We know from

Virgil of such a alliance. A priest hurling the stone telling Jupiter, strike down the Romans because his force was greater than the stone. In his role as Jupiter the carrier of thunder and of the lightning bolt. Lightning and thunder are surely, as early as Epicurus himself, the case of intentional and blindingly sudden acts, events whose causal form is determined afterward, occurring relatedly to the falling of rain. The sudden appearing of truth, to the sudden and unmistakable coincidence of sense and judgement as what had been obscure becomes immediately evident.

Demystifying the act mythologically defined as one of the properties of Jupiter, enlists the notion of justice against mythologizing thought. Zeus who destroyed the titans with his thunderbolt and his Roman counterpart was believed to descend in the form of a thunderbolt destroying titans a god, hovering over the Roman legions jaded-city-dwellers with outspread wings and raining down his powers upon them. But if Jupiter and other Gods shake the shining regions of heaven with appalling din, if they cast fire whither it may be the will of each one, why do they not see to it that those who have not refrained from some abominable crime shall be struck and breathe out sulphurous flames from the breast pierced through, a sharp lesson to mankind. Why rather does one with no base guilt on his conscience roll in the flames all innocent, suddenly involved in a tornado from heaven and taken off by fire. Virgil speaks of seeing Salmoneus cruelly punished, while he mimicked the fires of Jove and the thunders of heaven. But what he hurled was no mere ‘torch or smoky pinewood flare’. Salmoneus, too, I saw, who paid penalty while applying Jove’s fires and the thunders of Olympus, he borne by four horses and brandishing a torch, rode triumphant through the Greek peoples and his city in the heart of the Elis, claiming as his own homage of deity. Madman! to mimic, the stormclouds and inimitable thunder with brass and the tramp of horn-

footed horses! But the father almighty amid thick clouds launched his bolt-no fire-brands he, nor pitch pines smoky glare and drove him headlong with furious whirlwind. Turbine has been understood as the wind of the thunderbolt, and where '*turbine*' is the whirl of the instrument by which the person is hurled headlong. Fulcra "The pillar or support" of the mattress - frame' not mere feet of the mere pillar, which is still found among the ruins of Pompeii. The device used by Salmoneus to imitate the noise of thunder is considered to have been a turbo. Turbine has been understood of the fall of Salmoneus both as "the wind of the thunderbolt", and the thunderbolt itself. "*Turbine*" has been translated to mean "the whirl of the instrument by which the person is hurled headlong". "*Immani turbine*" signifying the whirl of a hurled weapon. *Whirl* is the primitive meaning of turbo, and we can speak of the turbo of anything which whirls with the same propriety that we speak of the *turbo venti* and *"quo turbine torqueat hastam*".

"What would Roman piety have thought of human thunder and lightning more terrible and more fatal than even Jove's own? What would it have made of the impious invention? Well, if it had not anticipated one of our uses of it, and, attaching the inventions and the inventors to the mouth of their own artillery, blown them into the air. The device employed by Salmoneus to imitate the noise of thunder will appear less proposterous if we take into account the popular opinion, that the noise of real thunder was neither more nor less than the noise of the trampling of Jupiter's horses, either by dragging bronze vessels on the ground, or by driving his horses over a bridge paved in bronze".

Virgil and the Turbine.
(James Henry, Aneidea, p. 351, Book VI,, 1969)

Measuring the Dark Hours.

Around about 6000 B.C. man entered a phase of his development known as the neolithic age. This neolithic revolution began in Persia and Northern Iraq, and spread within the next 1000 years to the Nile Valley, the coastal areas of Palestine, the upper basin of the river Euphrates, northern Syria and central Persia. In 3200 B.C., the Nile Valley was united with the Nile Delta into a single kingdom which lasted for three thousand years. The longest river in Africa, the Nile reaches four thousand miles, from its remote headstream, gathering the rainfall and snowmelt of the Ethiopean highlands, and the northern continent, into a single channel to the Mediterranean. Political unity in Egypt was reinforced by a melodramatic natural rhythm and mystic overtones. The Egyptians, even without the Greek yen for mathematics, invented a practical calendar that served everyday needs throughout their land. Avoiding the seductive cycles of the moon, the Egyptians had found a star to mark their year: Sirius, the Dog Star, the brightest star in the heavens. Once a year Sirius rose in the morning in a direct line with the rising sun. This marked the beginning of the Egyptian year. Julius Caesar adopted this calendar to make his Julian calendar, which survived the Middle Ages and was used by Copernicus in the sixteenth century. It is not surprising that early man was awed by the heavens and enticed by the stars. These first night-lights inspired ancient Babylonia and sparked the popular fancy. The rhythm of life on earth made the whole sky a stage for their mythological imagination. The heavens then were the first laboratory of mankind’s that lets us lift up our minds by means of the science which reveals to us the future. Man marked his time by the cycles of nature, the changing

seasons, the waxing or waning moon. If he was to go his own way he would have to make his own measures of time. And these man-made cycles would be wonderfully varied. The ancient Greeks, it seems had no week. Romans lived by an 8-day week. The days of the week remain a living witness to the early powers of the stars. Even when the sun shone bright, the movement of the sun's shadow was so slow that it would be of little or no avail in making minutes and useless for signaling seconds. Even after the sundial was designed to divide the daylight time into equal parts there was still the night. While man allowed his time to be parsed by the changing cycles of daylight he remained a slave of the sun. To become a master of his time, he had to find a way divide time into small units, he would have to make a machine. How did he conquer the night, and make it part of his life. Time was in "a moving image of eternity", and measuring time tantalized mankind all over the world. Anything that would flow, that would consume or be consumed, had been tried somewhere to measure time. For most of history water provided a measure of time, when the sun was not shining. By elaborate systems of calibration water clocks were made to indicate the length of hours from month to month. At each hour of the day a bell was struck and the doorway of the completed hour was closed. Then, at nightfall, the doors automatically opened, the lamp of that hour was lit, giving off a red glow, and finally by dawn all the lamps were illuminated. With the coming of daylight the lamps were extinguished and the doors of daytime opened to resume their cycle. Now not the flowing waters of time but the falling sands of time passed the hours of time. Sand-glasses were ill adapted for daylong timekeeping, either they were too big or too small and had to be turned too often. In the long run they were not much use in measuring the hours of the night. Every now and then, to solve the problem, someone tried to combine a time piece with a lighting device. For centuries, ingenuity was applied to

effort to use the fire that illuminated the night to measure the passing hours of darkness. The most common means of remote communication during these times was writing and receiving letters, and much of the information about remote places and news was received in this manner...

Hence it is evident that one's birth is more affected by local environment than by the condition of the moon. Of course, the statement quoted by you that the Babylonians for 470,000 years had taken the horoscope of every child and had tested it by the results, is untrue; forth this had been their habit they would never have abandoned it. (Cicero vol 20 p 481)

Early Man’s Use of Electricity

Modern archeology has done much to confirm the suspicion that some systematic knowledge of nature existed long before the Greeks. It is likely that about 15,000 years ago, people had already begun to observe the stars and to see them as constellations. Men possessed the desire to observe and describe natural phenomena which is the core of any scientific activity motivated with practical reasoning, springing from a desire to master nature and exploit its resources.

The pronouncement of the learned can be reduced to a very small number of general rules. Descardes earliest writings indicate that his natural curiosity was accompanied by a constant desire to conduct an investigation. He writes that. “In my youth, when I was shown an ingenious invention, I used to wonder whether I could work it out for myself before reading the inventors account. “This practice gradually led me to realize that I was making use of definite rules”. From Galen’s Scripta Minora “Those who are altogether unaccustomed to research, are at the first exercise of their intelligence befogged and blinded and quickly resist owing to fatigue, and failure of intelligent power, like those who without training attempt a race. But one who is accustomed to investigation, worming his way through and turning in all directions, does not give up the search”. Octopus use stones as tools to open muscles. Ants bind their nests with threads from their larva. Sand hornets us pebbles like shovels. Spiders spin webs with threads.

Roger Bacon observed a cat (literally a mouse catcher) that coveted some fish swimming in a large stone container, and when it could not catch them because of the water, it pulled

the stopper and allowed the water to run out until the container was dry, so that, with the water gone, it could catch them: thus the cat conceived of several actions in order to achieve its intended purpose.

Some of the oldest archeological finds show that chemical technology was well developed in both the great civilizations of the near east. The techniques of distillation, sublimation, and extraction go back to the fourth millenium B.C. Cuniform texts describe the manufacture of mercury from cinnabar and of sal ammoniac from other sources. The method of hardening iron was discovered at the end of the second millenium B.C.

Early man in Egypt was instructed to place writings in earthen vessels. An earthen vessel, in contrast to a metallic vessel, which has an intrinsic value based upon the metal from which it is made, cannot be cleaned or purified by immersion. Instead, an earthen vessel has to be broken and in that way is like a man formed from the dust of the earth. The resulting debris would have covered the holy place were it not for the miracle that the fragments were swallowed up in the ground. Much of a man time thus he spends in purifying metals. It becomes capable of being useful only after human intervention has removed it from its original state and made it into an object of use to man. Similarly, plants are connected to the ground and they are capable of becoming contaminated only after being detached from it. In this way vessels and tools implement the most direct evidence of man’s activity and of man’s presence on earth. The aim is to have laws regarding these objects of our social and industrial activity. The nation must have a kind of horror of anything impure in order to prevent it from becoming impure. Holiness is not communicated by mere contact, but requires the actual absorption of the holy substance. This is not the case in rituals, where depending on the situation, it spreads though direct or indirect contact, or by moving the

object. In contrast holiness and goodness requires real penetration to be transmitted to others. This relates to principle that a union of the spiritual qualities of male and female results from the harmonizing of opposing forces, which occurs in within the holy confines of the temple.

Electrical Signals and Spirits.

A description of an Arabian battery is found in a book called ‘Oriental Magic’. El Arab was according to legend, either a great magician or the first to make use of electricity. He utilized batteries to send threatening light signals against another tribe. Later he returned to the city and explained to the tribe how to use electricity. He explained that artificial lightning, like all other things in life, is useful, and should not be wasted. El Arab, had learned how to store lightning in a closed container. This artificial lightning could be employed using code in distant communication.

India was acquainted with the use of electricity and batteries. Agastva was the name of an Indian magician mentioned in the poem Ramavana. Agastva, like the Greek’s Prometheus – stole lightning from the gods and gave it to the people. Several manuscripts exist about Agastva that describe an Indian electric battery. A thoroughly clean copper-plate is placed in a clay casing. It is covered with copper sulphate and moist packing. Finally a mercury amalgamated zinc plate is placed on top of the packing. Contact with the battery will result in the release of energy known as Mithra-Varuna (Cathode/Anode). This energy was utilized to break down water into its primary elements Pranavaya (oxygen) and Udanavava (hydrogen). Connected in a series of hundreds of batteries, very high currents could be realized. The Indian’s used mercury amalgamated zinc to avoid corrosion and absorption of the electrolyte and the packing, similar to modern dry batteries.

The Egyptian manuscript the Leyden Papyrus contains various descriptions of electrical techniques for producing spirits. Take seven new bricks (dried in the sun), before they have been moved, and place them sunny-side up, three under a bowl, and four under a boy, the magicians helper, in order that he does not touch the ground. When handling these bricks one must be clean (dry). Various solutions are mentioned including copper sulphate. A mineral is mentioned called the Ilkh-mineral, whose name is derived from the two words El (the god of static electricity), and Akh (the god of fire).

The Leyden Papyrus mentions other batteries that utilize lead sulphate, and distilled water. Other electrolytes that are mentioned include sodium sulfate, and the use of accumulator batteries The Lotus blossom is used in Egyptian and other cultures to be identified with electrical phenomenon. Various electrical devises were employed as stunt-devices, and some were used in electrofishing. An electric current was passed through water, causing fish to be paralyzed and they would float to the surface, where they could easily be collected. Solar energy was used extensively in ancient Egypt in conjunction with producing electricity and thermobatteries. Thermoelectric cells and concave mirrors with a diameter of three square meters could produce energy on the level of 300 watts. Mirrors of this type are known throughout the Mediterranean region, including the Greek colonization of Sicily. The Egyptian mirrors were coated with aluminum sulfide in order to allow the visible light to pass through while absorbing the infrared part of the spectrum. Similar coatings are known from jewelry coated with iron oxide. Athena learned to ride the wings of the winged horse Pegasus, a mythological symbolism signifying the harnessing of electricity from mirrors via a thermoelectric cell represented by the head of Medusa.

In the tenth century B.C. King Solomon the king of Israel inherited electrical technology from Moses, who had inherited it from the Egyptians After Alexandria the Great invaded Persia, the Persians fled to India with the technology which they had inherited from Solomon. St. Augustine mentions the use of electrical generators in ancient Egypt.

The battery was likely used in the process of electroplating jewelry. Research has shown that used with an electrolyte such as vinegar it could provide a sufficient voltage for this purpose.

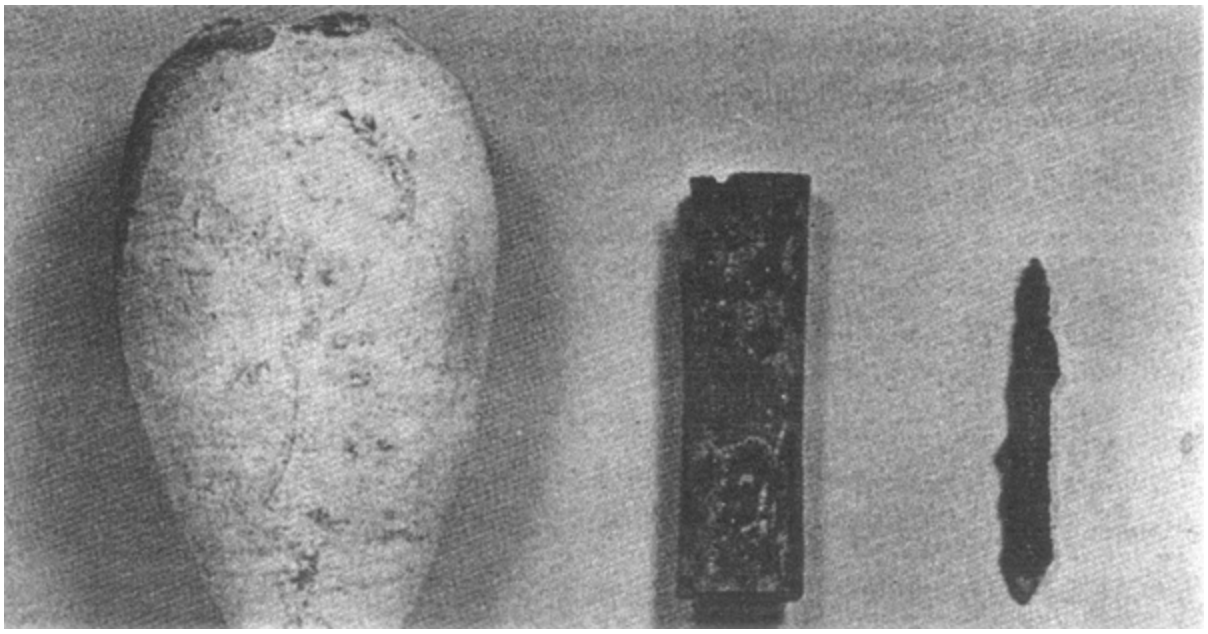


Figure An early battery from Babylon B.C.

(Oriental magic, Idries Shah: London 1956)
('Magic In the Making of Man', Michael Edwardes)

The Recognition of Sound as Vibration

The scientific development of the study of sound occurred in China and Rome during the same period. In the Roman Empire Vitruvius (23 B.C). gives a great deal of acoustic information, concerning the nature of the human voice, architectural arrangements needed to amplify it, such as the use of bronze vases carefully placed and tuned to different pitches, in order that the human voice and its harmonics could be caught and amplified by resonance. The Chinese also thought of sound in terms derived from the observation of waves in liquid media. In the -2nd century they demonstrated a conception of radiating wave-fronts which they boldly applied to all media whatever the viscosity, including the aetheric *chhi* in which even psychological events participated. Two words which when used in in an acoustic technical sense distinctly indicate a mental connection between waves in water and air are *chhing* and *cho.* The *Kuo* Yü refers to pitch-range and the formation of sound by the human voice. When the High King of Chou, desired to melt down a Wü-yi bell, the second highest in the gamut or upper pitch range, and to make from its metal a Ta-lin bell, the fifth highest in the gamut, also in the upper pitch range. But Wu-yi was a Yang (Male) bell and therefore not loud but soft *(hsi),* whereas Linchung was Y*in* (female) bell and therefore loud *(ta).* Even if the new bell was tuned correctly its volume would be false. Shan Mu Kung pointed out that debasing the pitches was as bad as debasing currency. The people can only be trained in precise pitch recognition and appreciation if the sounds which they hear are correctly tuned. That which enters through the eye and ear must be in accordance with correct measures or the heart will be corrupted. *The harmonies which is discernible*

to the ear within the intervals of the pitch-range which is discernible to it does not exceed the range of the human voice.

The Detection of Vibrations

The Mo Tsu book (-4th century), in the discussion of fortification technology, mention the use of several hollow vessels as resonators. The vessels are placed five paces apart, and lowered fifteen feet below the ground until one reaches 3 feet layer of water.

(Science and Civilization in China, Vol. 4, Physics page 202-228)

From Stone to Bronze With the Sumerians.

The inventions that made the heyday of Sumer one of the most brilliant epochs in the history of man were the products of numberless artisans who labored in the service of the gods. Here surrounding the courtyard of the Temple Oval were storerooms, offices, workshops for smiths and sculptors and meeting places for traders bringing gold and copper ingots from far places. Of the skills that evolved two were crucial for future ages: the invention of writing and the use of metals. The transition from the use of stone to the use of metal began with the discovery that copper could be extracted from ore, and later that the addition of tin to copper produced an alloy of superior strength and hardness. A readiness to imitate appears to be essential for the spread of invention and for the furtherance of techniques. It is by imitating and copying and adapting, that one may expect original inventors to emerge in due course. At first the artisans simply copied the traditional stone weapons and utensils, when their skill increased, their imagination was stirred, and they produces art objects that still stand today as masterworks of craftsmanship. The growth of technology had profound consequences for society through long distance trade. The temple accountants of Sumer kept careful records of their transactions, and prior to 3000 B.C. had developed a system of numerical notation, based on both tens (decimal) and sixes (sexadecimal) which survives today in our system of telling time and our division of a circle into 360 degrees. They devised units of weight, capacity and length. In course of bookkeeping the Sumerian scribes recorded numbers commodities and the names of

people. Thus writing began out of an economic need. The oldest written material unearthed in the world is temple accounts found at Uruk. It took another 1,000 years before these primitive notations evolved into a flexible, phonetic system, enabling man to write anything he desired..

The Phonecians Mariners and Merchants and Their Invention of the Alphabet.

To ancient man is inherent the ability to hear and to announce himself to others over distance and space. Experts can read ancient 4500 year old script from Mesopotamia telling of life in these times. The human intellect evolved through the selection of whose adaptiveness resides in those functional capabilities we label as ”mind”. The mind’s ability to store and recall past events, to perceive patterns, and hence to predict future events such as the coming seasons, we call memory. Along with memory, the mind evolved an ability that enormously enhanced its usefulness, namely metaphoric, or symbolic communication. At first gestures were used to convey ideas, then about 200,000 years ago, symbolic vocalization became possible, giving rise to language, and thus the social phenomenon, allowing the transmission of accumulated knowledge. The Phonecians were strategically situated to acts as middlemen between Hither Asia and Europe. The first Phonecian cities arose before 3000 BC. on the coastal slope where the modern states of Lebanon and parts of Syrian and Israel now stand. The phonecians became the greatest sailors and explorers of their day. They relied on others for more inspired knowledge, where they obtained the wheel and plow, and from Egypt a knowledge of hieroglyphic writing. For most of its long history Phonecia was dominated by the great empires around it. From about 2600 to 1200 B.C. it languished under Egyptian rule which waxed and waned in proportion to the pharaoh on the Egytian throne. Manned by skilfull crews and slave oarsmen, the Phonecian mariners ventured ever

further from home, beyond the Aegean to Malta, Sicily and around Gibratar to the Atlantic coast and Spain. There is evidence that when the tin deposits in the near east began to run out, the Phonecians sailed all the way to Britain in quest of this crucial metal. One of their crowning achievements, was the circumnavigation of Africa about 600 B:C: in the service of the Egyptian Pharoah Necho. In the lands where they landed they traded for a few days and set sail. Their wares included items of gold silver and bronze and of gray iron, ivory and fine textured wools and linens. In response to the developments of markets abroad the Phonecian seaports became studded with vast warehouses and workshops.

The Phonecians need to keep records of their transactions evolved into a new and ingenious form of writing, simpler than any hitherto know, and so simple that literacy would never again be the monopoly of professional scribes. Like all great inventions the alphabet evolved from a synthesis of ideas. A millennium before the Phonecians the Egyptians used a rudimentary alphabet consisting of 24 signs standing for 24 consonant and semiconsonant sounds of their language. The Egytians failed to recognize these symbols as basic phonetic elements and used them in conjunction with hundreds of pictograms and ideograms. The Phonecians expanded on this concept, and took an important shortcut and selected one symbol for each consonantal sound in their language. The Phonecian alphabet is the direct ancestor of all alphabets in the western world. Sometime between the Ninth and Eight centuries B.C. the 22 letter Phonecian alphabet was adopted by the Greeks with a few alterations consisting of adding vowels and other symbols. The Phonecian alphabet exerted a profound influence on religious writings and the Old Testament. Through the Bible the entire civilized world has fallen heir to Phonecian inventive art, the art of writing.

Planned Religion and Planned Science.

On the Aegean coast of what is now Turkey was posited a beginning of the universe, when the rotation started, and the various different elements began to be separated out from the original mixture. The stuff of which the earth is made, fire, air, water, and earth, the world eternally oscillating between a state in which each of the four elements is entirely separated from all the others, and a state in which all four are combined to form a whole homogeneous mixture. Finally we come to the Atomists their claim that the world is made of many indivisible atoms, their views about the basic causes of change invoked a single intelligence, which started the process of separation more abstractly of “Necessity” as the cause. For some three hundred years before Aristotle was writing there had been a succession of Greek thinkers interested in nature a very potted history would follow.

During the 12th Century B.C. the ancient world was riven by upheavals, invasions and civil war. The Egyptian Empire crumbled slowly after the reign of Ramses II in 1224 BC. Perhaps as a consequence of the destruction of Troy a great number of Greeks began to migrate across the Aegean Sea and and settle on the coast of Asia Minor. Movements that extended over a long period of time and slowly set the stage for the later events of recorded history. The coming of the Dorians coincided with the transition from the Bronze Age to the Iron Age in Greece. Clay tablets found in Greece prove that the Greeks could read and write before the Dorian invasion. The development of the Greek alphabet was completed in the Eight century B. C. Prior to this existed

what has been called the Greek Dark Ages. It was during this interlude that the Phoenicians made themselves the intermediaries of cultural exchange in the Mediterranean world. The period that followed was a formative one during which a population mixture fused a compound that produced the historic Greeks whose energy would later engender the glories of the Golden Age. By 500 B.C. the birth of classical Greek culture was at hand. Soon the great days of Socrates, Plato, would dawn on Athens. The state of the civilized world in the Fifth century before Christ was the world of Greece, of hundreds of city-states ringing the eastern Mediterranean and centering upon the Aegean Sea. The rest of the world clustered in fear around one or the other of the two great powers. Of these two, one was a great democracy, rich in freedom and self rule. The other was a police state, powerful, mobilized within, and insulated against the outer world. This was humanity's great civil war. Sparta the great land power, and Athens the sea power fought for 27 years in a struggle that consumed the whole Greek world. While the two great powers continued to stare sullenly without striking directly at one another, the actual fighting began among satellites of Sparta and Athens. The whole Greek world's power balance was so even that no event could occur without tipping the scales enough for all to see. Pericles, the wisest of the Athenian leaders said 'I am more afraid,' he said, 'of our own blunders than of the enemy's devices'. The blunders were many, and some time grievous. The people to begin with were prone to presume not only inevitability of war but also the inevitability of victory. Fear and exigency led to the illusion that the war had been won with coercion. It forgot that all the different people of the world might not revere them equally. At any rate the tragedy of Athens demonstrates a vanity of a democracy that believes that because its intentions are good, and its institutions honorable, it has achieved immortality..

In the days when the Arabs inherited the culture of Greece, Greek thought was chiefly interested in Science. Athens was replaced by Alexandria and Hellenism and had an entire modern outlook. This was a trend with which Alexandria and its scholars were directly connected, but it was not confined to Alexandria. It was a logical outcome of the influence of Aristotle, the founder of modern science, and to a great extent directed and tinctured by ideas gained from Greek studies.

How was this knowledge transmitted to the Arab world. In entering the inquiry it may be premised that there are at least 3 threads connected. Greek scientific thought had been around long before it reached the Arabs, it had already spread abroad in various directions. One channel of transmissions was indirectly through India, from material originating in Alexandria. Then there was another passage through India which likely had its beginning in the Greek kingdom of Bactria, one of the Asiatic states founded by Alexander the Great, and a land route long kept open between th Greek world and central Asia and Buddhism which at one time promoted intercourse between east and west At first the city of Baghdad was the distributing center where Greek material was derived from the Hellenistic world brought together in Syria, Bactria, India, Persia, and others, and from Bagdad this material spread out in an Arabic form to all social groups held together by the religion of Islam. Greek was an international language and Christianity appeared as an international religion that claimed a Jewish origin (for salvation of the Jews St. John IV 22) but it developed in an atmosphere of Hellenistic Judaism, such as produced Philo of Alexandria, who used his old Testament in Greek, not in Hebrew. ’People of the Book’ were Christians or Jews. In Christians theology ’WORD’ was used by St. John in the fourth gospel, signifying a mythical name for Christ. The heritage of Greece was passed on by the Christian church.

The Christian church in its earlier period was essentially a Hellenistic force. Its language was Greek and its first outspread was amongst those who were Greek in speech. Even in Rome it used Greek. Christianity spread first through urban populations round the Mediterranean where the language was Greek. It was only later that it penetrated the vernacular-speaking populations of Egypt, Syria, Italy, Gaul, and Africa. On direct examination of Aristotlian philosophy, an Arab scholar heard a reader mispronounce two vowels in a text perverting the sense, and this misrepresentation of the inspired word shocked him so that he forthwith began to devise methods of similar errors. For this purpose he introduced vowel points into the hither to unpointed Arabic text, and began giving instructions in grammar and vocabulary and in doing so seems to have been influenced by Aristotle’s logic not Greek grammarians. The lines of oral transmission of two schools formed a grammatical pedigree. In astronomy and mathematics the work of Greek and Indian scientists was coordinated, and thence a real advance was made. Bactria is of interest chiefly as a factor in the evolution of Buddhism. In 128 the Chinese overtook Bactria and made an alliance between them and China, but ceased to have any interest in them soon after. Han, the son of the Chinese Emperor and his following was taken to Balkih where a monastery was built for them. From the time of Trojan onwards the history of Western Asia centered in a prolonged duel between Rome Parthia or Persia.

The Science of Strabo

With the establishment of a Greek government in an Egyptian population new problems had arisen. A god pointed the way to a solution. First Ptolemy learned in a vision of the night that a new worship was required, and he was to fetch a statue of Pluto from a temple of Jupiter and create a center for the new cult.

A combination of Egyptian and Greek theology provided a carefully thought out adaptation of the religion of Egypt to the spirit of the Greeks. The new god showed immediate signs of vitality by healing and restoring the sight to the blind. The cult lasted till the end of paganism and beyond penetrating Italy and reaching Pompeii. The science, art and literature of Greece were put at the service of the new religion created by Ptolemy. It became the handmaid of religion and was applied to the production of miracles. Strato had proudly announced that he did not need the help of the gods to make a world. The gods did not disdain the help of Strato to run this one. Hero of Alexandria, the records of Strato's work on pneumatics and other sciences explained how science would be useful in providing the requisites of civilized life and producing bewilderment and awe. These effects were applied to temple miracles. We learn of religious applications of the science of optics, to the production of apparitions, the science of hydraulics applied to produce supernatural movements. Improved lighting effects and the introduction of organ music were also achievements of this age. The natural force employing a magnet was utilized in a ceremonial theatrical. The scene was a temple where the actors were a Mars made of polished iron and a loadstone Venus. Preparations were made for the marriage of the two. Myrtle wreaths adorned the portals of the marriage chamber.

The couch was loaded with roses and the couple went through the marriage service. The choir entered singing carrying the nuptial torch. There were lights, music, colors and odors providing special effects, and then came the miracle. The iron figure of Mars was brought within the ambit of attraction of the loadstone Venus. ‘Without quitting her station, the goddess by her potent charm draws the god into her arms. She clasps him to her bosom with amorous breath, says the poet, embroidering his theme. The date of this poem is about 400 AD.

((*Geology in Embryo*, Proceedings of the Geologist’ Association, C.E.N. Bromehead Vol. LVI, part 2 1945 p.115)

Sixteenth-century Dutch engraving showing the Colossus bestriding the harbor entrance in Alexandria

The Museum Of Alexandria

The huge city of Alexandria was the Greek capital of a great Egyptian territory, and Greek science was to play an altered role. None of Roman ports compared to Alexandria. Its 85 meter lighthouse was in ancient times one of the worlds seven wonders. Its light shone with the help of a giant mirror 55 km out over the ocean where it continued to shine until destroyed by earthquake in 1303. The port meant that larger ships with keels could harbor in the city. The court and the army were Greek, the city dweller were, Jews, and after the Greeks were socially the most important. The population of the country was mostly Egyptian which remained untouched by the advent of a Macedonian government and its imported Greek culture. Egypt is called the gift of the Nile. The Nile does not irrigate the land of Egypt without human intervention. There was an enormous network of irrigation canals, long underground passages giving access to subterranean springs, to be kept in order. Ptolemic had undertaken to govern toil-worn water-leaders, burdened water-carriers, burrowers into underground passages, quarrymen, divers for sponges and bath attendants, earning a miserable wage which gave them no prospect of ever owning anything of their own. The inventive genius of the scientists and mechanics called into existence by the Museum could not, at this date in the history of the world, be applied in a superpower manner to the relief of mass misery. Science began to retreat from its function as man’s weapon against nature and confined itself to being a discipline for the contemplative. The engineers and technicians were lords in their own domain, but even they must bow to the superior wisdom of spiritual advisors who could state authoritatively whether their endeavors were

directed to the ultimate good of mankind. Julius Caesar bears the heavy burden of responsibility for the first fire in Alexandria's library, where 1 million rolls of books and thousand or years of knowledge were set up in flames. Out of the ruins a new library was built with what could be assembled from other sources, only to be burned again 400 years later. In the year 240 B.C. the Chinese emperor Tsin Che Hoong ordered all scientific books in China to be burned. St. Paul collected all books with mystical contents and burned them in public. In more recent time Mao Tse-tung supported large cultural revolutions with public burning of literature in the streets. We are left with only fragments of the immense historical writings that have survived, and from them we try to piece together secret and occult writings.

(*Greek Science 2* Benjamin Farrington 1949 Pelican)

The Time Of Pliny Science in the Second half of First Century.

Three important events occurred during the reign of Nero the Roman emperor. The exploration of the upper Nile, his use, at the circus, of a cut emerald as a lens, (Nero's lens and the piercing of the isthmus of Corinth), according to Pliny Nero was nearsighted. Nero has been accused of starting that terrible fire of Rome in order to be able to rebuild the city he tried to throw the odium of calamity of the Christians, many who were put to death on that account. Christians at Rome told of a contest of powers and the flight over the city. During the contest before emperor Nero in the Roman Amphitheater, Simon Magus levitated above the city. Simon Magus (c67 AD) was a reputed sorcerer said to have bewitched the people of Samaria, and led to believe that he was possessed of divine power. They claimed that he could make himself invisible when he pleased, to be able to levitate at will, and assume the appearance of another person, pass through fire unharmed, cause statues to come alive, make furniture move without any visible means of emparting motion, he claimed to be God. An account described to St. Clemens states that on the arrival of Peter, Simon flew gracefully through a window into the outside air. (Acts VIII) New Testament.

Under Nero's reign two centurions were ordered to ascend the Nile above Syene and find its source, they reached a point that was not rediscovered until almost eighteen centuries later, by the Egyptian expeditions of 1839-1840. A new attempt to introduce Buddhism into China was probably attempted during this time but it did not bear fruit.

Keenness of sight has achieved instances transcending belief in the highest degree. Cicero records that a parchment copy of Homer's poem 'The Iliad' was enclosed in a nutshell. He also records a case of a man Strabo who could see 123 miles. He was in the habit of telling from a promentory in Sicily the actual number of ships in a fleet that was passing out from the harbor in Carthage. Callierates used to make such small ivory models of ants and other creatures that to anybody else their parts were invisible. XXII (P-563 Plliny). There is one marvelous instance of transmission of a spoken message: Messengers who reported news of victory over Perseus to the Romans on the very day on which it happened were visions and warnings sent by divine powers. A person in Greece named Charmadas recited the contents of any volumes in libraries that anyone asked him to quote, just as if he was reading them. Finally, a MEMORIA TECHNICA was constructed, which was invented by the lyric poet Simonides and perfected by Metrodorus of Scepsis, enabling anything heard to be repeated in the identical words.

The Legend of Virgil.

Strangely enough magic and sorcery in Medieval Italy seem to have centered around many great personalities of the church, and even several popes have been included by the historians. On a Neapolitan hill he built a Statue of brass and placed in the mouth a trumpet. Lo! when the north wind blew there came from that trumpet so terrible a roar that it drove back the sea the noxious blast of Vulcans forges, which even to this day see the hiss near the city of Puossola.

Virgil walking about spied a great hole in the side of a great hill whereupon he went so deep that he could no longer see no more light, and then he went a little further therein, and then he saw soon light again, and then he went straight forward and within a little while he heard a voice that called “Virgilus Virgilus”, and he looked about and he could not see nobody. Then Virgilus spoke and asked “who calleth me?” Then he heard the voice again but saw nobody. Then said he. “Virgil see you not that little board lying beside you there marked with that word”, then answered Virgil. “I see that board well enough”. The voice said, “do away that board, and let me out thereat”. Then answered Virgil to the voice that was under the little board, and said, “Who art thou that talkest me so”? Then answered the devil. “I am a devil conjured out of the body of a certain man and banished here in hell till the day of judgement”.

Pliny

The greatest scientist of this period was Pliny the Elder. He completed at the age of 77, his ’Natural History’, an encyclopedia of very great importance, not only as a mirror

of contemporary knowledge, but because it remained the main source of scientific knowledge. Towards the end of the same period, another author of encyclopedic type, Plutarch, was writing a number of books in Greek. These men influenced the scientific and ethical development of mankind to present times. To investigate any subject relative to this time one should consult the writing of these men. Greek grammar was not systemized until the first half of the second century. The evolution of Latin grammar was much more rapid, because it was modeled upon the Greek example. Linguistic consciousness had been introduced by Alexandrian grammarians. Pliny the Elder, Gaius Plinius Secundus, died while observing the eruption of Vesuvius in 79. His ’Naturalis Historia’ in 37 books, dedicated to Titus in 77, is a very elaborate scientific encyclopedia of great value. In it Pliny refers to a list of his authorities, 146 Roman and 327 Greek authors being quoted. He explained that people may be living at the antipodes, places on the earth’s surface diametrically opposite to each other. He stated that the speed of light is greater than the speed of sound. Pliny’s contemporary Plutarch the Greek writer and moralist’s main writing presents a summary of the knowledge of his day on.

Leviation.

The suspension of a material body in the air without any visible support, in apparent opposition to the law of gravity. There seems to be little doubt concerning the fact of levitation. It has been suggested that this type of bodily suspension surpasses the phychophysical powers of nature. Levitation of human bodies or of inanimate objects has been reported in the lives of the saints, in cases of diabolical intervention, in spiritual seances, and in certain psychotic seizures. The three possible causes of levitation are God (directly or though the agency of angels), the devil (with Gods permission), or some other force or power of nature. Among the numerous canonized saints who experience levitation the following are the most renowned. Saint Teresa of Avila, Joseph Cupertino, Catherine of Siena, Philip Neri, Peter Alcantara, Paul of the Cross, John Bosco, Peter Claver, and Gemma Galgani. Levitation is not admitted as one of the miracles required for the canonization of a saint, though it may be considered a testimony of a person’s heroic sanctity.

(The Encyclopedia of Religion.)

On the Topic of Metals

No piece of matter can escape detection of its character and composition, no piece of matter can hide its fingerprint. The neolithic revolution spread slowly. 2000 years elapsed before it reached India and the mainland of Europe, and over 3000 years before it reached Britain. In all these areas the gathering and mining of metals appeared in its wake. The first sources of Iron was probably meteorites ”metal from heaven”. 5000 years ago, copper, a brilliant ore of yellowish red color has been known for more than 8,000 years, copper and gold were the first metals gathered in any quantity.

A civilization using considerable copper was established in Mesopotamia by about 3500 B.C. and in Egypt about 300 B.C. From these dates until about 2000 B.C. western Asia and North Africa was in the copper age. A life size statue of Pepi I of Egypt in about 2300 B.C. is believed to be the oldest metal statue in existence. Lead ores occurred in areas where copper was gathered and was known in Mesopotamia about 3500 B.C.. The most common source of silver occurred as galena the lead ore, which contains silver, and a process to separate the two was developed by 2500 B.C.. The first metal-using cultures exchanged their materials for surplus food. Silver was used by the Summarians as the basis for currency. The knowledge of metals was diffused over Europe to places like Crete and Troy. By 2400 B.C. copper mining began in Spain, and by 200 B.C. extended to Transylvania and Slovakia, in the Eastern Alps, and in the Balkans and Saxony. By the year 200 B.C. Europe’s culture was based on copper and developed over a wide area. Tin the vital ingredient needed to reach the bronze age. Bohemia and Saxony were the areas supplying the larger proportion

needed in the ancient world. Iron although it occurs abundantly, was not successfully smelted until about 1400 B.C. It was the Hittites who solved the problem of increasing the temperature 400 degrees centigrade higher than the melting point of copper.

The technique for producing iron were not known until about 1200 B.C. and from this date became widely known, reaching Britain about 200 B.C. becoming popular to the Romans about 100 B.C. iron was a curiosity in parts of Europe until the classical period of Greece (c 500 B.C.). The Greeks offer the first description of mining from their silver mines at Laurious 25 miles from Athens, reaching their peak about 5^{th} century B.C. More than 2000 shafts had been sunk in to the ore deposits, which was honey-combed, with a maze of passages. The main passages were 4 feet by 6 feet in sector and some had footholds by which the miners climbed. Mining in the Roman Empire was extensively exploited for its mineral wealth on a scale never before seen, and the problem of drainage was resolved in an imaginative way. The Romans developed lead mines in Britain very rapidly after their invasion in A.D. 43. Copper and tin were made into bronze and gold was used in trade with India and China. The mining in Spain was greater than anywhere. In the second century the mines of Murcia employed over 40,000 men. The Rio Tinto mines had a training school for mining engineers, who could be sent to other mines. Some of the Roman gold mines in north-west Spain and the early tin workings in the Erzbirge of Bohemia were placer or stream deposits. The main placer deposits occur in the sands and gravels of the river valleys below the primary veins. Many of the famous gold deposits of antiquity were of this type, including the gold-bearing gravels of the river Pactolus at Sardis in Turkey. Which for some time provided enormous wealth to King Croesus and the Lydian state. The heavy minerals such as gold are often associated in placer deposits

with other heavy minerals, notably the magnetic black iron oxide, magnetite sand which itself has been used as an iron ore. Gold was regularly recovered in small quantities from the Cornish tin streams. Roman mines were very deep, mines in El Centemillor in Spain were as much as 650 feet deep, the water level was high. Perhaps the most sophisticated water raising devices used in mines were the Roman water-raising wheels such as those used at Rio Tinto. The wheels at Rio Tinto were wood held together with wooden pegs and their axels were of leaded bronze. Iron could not be used because of extremely corrosive environment of the mine. The rims of the wheels were divided into compartments, which would scoop the water from the sump and carry it up to the next level and next wheel until the surface was reached. The wheels were about 4 meters in diameter and raised water through about 30 meters. The use of iron liberated forces which began to disturb and destroy established relations and to induce in men’s minds fresh ways of looking at the world. Iron draws all men to itself said Homer, catching the essence of time and its wide reaching results. The Chinese had built an iron bridge already 500 B.C..

Tin-The Element

The discovery, around 3500 BC, that copper could be made harder and stronger by alloying with tin can be heralded as the beginning of the Bronze age. The oldest reference of tin is found in the Old Testament, and a strip of tin free from silver and lead has been found in the wrappings of an Egyptian mummy from not later than 600 BC. Because of its relative scarcity tin resulted in substantial trading contact. Britanny became known as the source of tin. In 8 BC Cornwall was identified as a source of tin, but it is likely that the Phoenicians may have worked mines in Cornwall as early as 1000 BC. The knowledge of bronze traveled to other nations. The oldest Chinese bronze artifacts date from 2200 BC.

Pliny in his Historia naturalis writes:

There are two kinds of plumbum nigrum and candidum or album (ie. black lead and shining or white lead). The plumbum candidum is the most valuable and it was called cassiteros by the Greeks. There is a fabulous story told of their going in quest of it to the islands in the Atlantic Ocean, and of this being brought in boats made of osiers covered with hides. The plumbum candidum occurs as a black sand found on the surface of the earth, and it is to be detected only by its weighty it is mingled with small pebbles, particularly in the dried beds of rivers. The miners wash the sand, which is then melted in the furnace and becomes converted into plumbum album.

The early Greek alchemists called tin ”Hermes”, but by about AD 500 alchemists called it “Zeus” or “Jupiter”, (Zn)

understood to mean the thunderbolts of the king of the gods. It was also referred to as diabilus metallorum, the devil of metals. Compound of tin appear to date back to the Copts of Egypt, who reportedly used basic tin citrate in dye preparations.

Reference (Tin - The Element P.G. Harrison)

Pliny Natural History Book XXXIII XXI 71-74

On the topic of metals mining and metalurgy.

The first solid gold statue of a human being was one of himself set up by Gorgias of Leontini in the temple at Delphi about the 70th Olympiad. So great were the profits to be made by teaching the art of oratory..... *'The worst crime against man's life was committed by the person who first put a gold ring on his fingers, though it is not recorded who did this, for I deem the whole story of Prometheus mythical, although antiquity assigned to him also an iron ring and intended this to understood as a fetter not an ornament.* As the story of Mida's ring which when turned around made its wearer invisible,.

We accuse of crime the man who first conferred dignity on gold by using gold rings. Let women wear gold bracelets and let a necklace of pearls hang invisible suspended by gold chains from their neck, so that even in their sleep they may retain the consciousness of possessing gems.

Gold is dug up from shafts is called 'channeled' or 'trenched' gold. It it found sticking to the grit of marble. These channels or veins wander to and from along the sides of the shafts, which are held up by wooden props. The ore which is dug out is crushed, washed, fired and ground to a soft powder with a the mortar. The slag that is thrown out of

the smelting furnace from every metal, in the case of gold is pounded and fired a second time. The crucible's for this are made of a white earth resembling clay that can withstand the blast of air, the fire, and the intensely hot material.

The third method will have outdone the achievements of the Giants. By means of galleries driven for long distances the mountains are mined by the light of lamps - the spells of work are also measured by lamps, and the miners do not see daylight for many months... In both kinds of mining masses of flint are encountered, which are burst assunder by means of fire and vinegar .... This method makes the tunnels suffocating through heat and smoke, they are broken to pieces with crushing-machines carrying 150 lbs. of iron, and the men carrying the stuff out on their shoulders, working night and day, each man passing them on to the next man in the dark, while only those at the end of the line see daylight. If the bed of flint seems too long, the miner follows alnong the side of it and goes round it..... there is a kind of earth consisting of a sort of potter's clay mixed with gravel.. which it is almost impossible to overcome. They attack it with iron wedges and the hammer-machines-..and it is thought to be the hardest thing that exists, except for the greed for gold, which is the most stubborn of all things... When the work is completely finished beginning with the last... A crack gives warning of a crash.. He by shout and gesture gives the order for the workmen to be called out and himself at the same moment flies down from his pinnacle.. The fractured mountain falls asunder in a wide gap, with a crash which is impossible for human imagination to conceive, and likewise with an incredible violent blast of air. The miners gaze as conquorers upon the collapse of Nature. And nevertheless even now there is no gold.. nor did they positively know there was any when they began to dig, the mere hope of obtaining their coveted object was a sufficient inducement for encountering such great dangers

and expenses. Another equally laborious task involving even greater expense is ..bringing streams along mountain-heights frequently a distance of 100 miles for the purpose of washing away the debris of this collapse;... this also involves a thousand tasks; the dip of the fall must be steep, to cause a rush raher than a flow of water, and consequently it is brought from very high altitudes. Gorges and crevasses are bridged by aqueducts carried on masonry; at other places impassable rocks are hewn away and compelled to provide a position for hollowed troughs of timber. The workmen hewing the rock hangs suspended with ropes, so that spectators viewing the operations from a distance seem to see not so much a swarm of strange animals as a flight of birds. In the majority of cases they hang suspended in this way while taking the levels and marking out the lines for the route, and rivers are led by man's agency to run where there is no place for a man to plant his footsteps... At the head of the waterfall on the brow of the mountains reservoirs are excavated measuring 200 ft. Each way and 10 ft. deep. In these there are left five sluices with apertures measuring about a yard each way, in order that when the reservoir is full the stopping-barriers may be stuck away and the torrent may burst out with such violence as to sweep forward the broken rock. ..Thus the earth carried along in the stream slides down into the sea and the shattered mountain is washed away, and by this time the land of Spain owing to these causes has encroached a long way into the sea.... According to some accounts Asturia and Callaccia and Lusitania produce in this way 20,000 lbs. weight of gold a year.

It is a remarkable fact that the shafts initiated by Hannibal (221-219 B.C.) all over the Spanish provinces are still in existence (second half of the first century); they are named from the persons who discovered them.. One of these mines furnished Hannibal with 300 pounds weight in silver a day,

the tunneling having been carried a mile and a half into the mountain. Along the whole of the distance water-men are posted who all night and day in spells measured by lanterns bale out water and make a stream.. The vein of silver nearest the surface is called 'the raw'. In the early days the excavations used to stop when they found alum, and no further search was made, but recently the discovery of a vein of copper under the alum has removed all limit's of men's hopes.

*All gold contains silver in various proportions. Whenever the proportion of silver is one-fifth, the ore ic called 'Electrum'. A quality of electrum is that it shines more brightly than silver i lamplight... Other mentions of mixtures used to improve the reflective properties of gold include a mixture that goldsmiths made with Cyprian copper and the urine of a boy who has not reached puberty with the addition of soda. The mixture is ground in a mortar and is called Santerna in Latin. Having been so treated the application of borax gives it brilliance. '*After these details let us speak about the varieties of silver ore, the next madness of mankind'.

England mining.

The geographer Strabo writing in the Principate of Tiberius (A.D. 14-38), gives account of British exports to the continent. The metals came from Mendip or Peak lead deposits, tin from Cornwall, gold from Wales, and iron from the Forest of Dean of the weald. Cicero wrongly concluded from Caesar's staff that there was 'not so much as a scruple of silver' in Britain. In Britain the principal metal product was lead, which sounds dull, until we recall that the only way of producing silver known to the ancient world was by cupellation from lead. In the Roman world silver was the main currency, and the need for large quantities advanced

the development of British lead resources. The quantity of lead extracted in Britain was very great, and Romans were struck by the ease which it could be mined.. Pliny refers to open cast mining but mention s that production was restricted in favor of the Spanish market. This is one of the rare cases in which marketing controls are known to be applied, though similar restrictions were applied to vine-growing in Gaul. The imperial stamped ingots continue until A.D. 164-9 giving way to private enterprise. In the fourth century A.D. Britain was still famous for its metal production. The copper workings of Britain were also of substantial value themselves and in relation to bronze. A significant increase in activity under Constantine commences a very wide distribution of pewter with official stamps being concentrated in London. In the sixth century A.D, a storm-blown Byzantine ship could unload its corn and relieve a famine in Exeter and return with a cargo of tin. After tin came gold. Only one gold mine of the Roman age is known in Britain at Dolau Cothi. The mines were both open-cast and deep adits, following the veins of gold-bearing pyrites. Wheels for lifting water were installed to drain them as in Spanish mines. The ore was pounded, milled, and washed, and water was brought in a special aqueduct some eight miles long. The iron mines in Britain were numerous and no less productive than the lead mines. Very large quantities of slag and cinders were used in local road construction. Roman blast-furnaces were used in some areas and sometimes blooms were re-smelted in furnaces for ultimate forging into weapons, nails, and other items were produced in the workshops. This picture of a military arsenal is unique in the Roman world. Coal was also mined in Roman Britain. In industry coal in preference to wood or charcoal was occasionally used for smelting lead, iron and glass, and for heating hypocausts. In England, coal would arrive as ballast in the barges and be transported much more easily in the canal system than logs. In addition to the worship of the

Emporer, there was the worship of the State deities of Rome. Jupiter, Juno and Minerva, Mars, Apollo, Vulcan, Ceres, Mercury, Neptune, Victory and others. There was an elegant relief of a deity belonging to a monument which might well be part of a column to Jupiter, a statue of Victory and shrines were known. The civilian world had its regulated and calendared observances but these were obscured by lack of direct evidence. Around 360 A.D. the Church attached importance to the suppression of the British heresy of Pelagianism and had a well-attended conference on the subject at Verulamium, a generation after the Imperial government had ceased to function in the province. The first attempt to introduce a religious focus of loyalty failed.

(Roman Britain, I.A. Richmond 1963)

The Use of Iron In Buildings.

The use of Iron columns and beams goes much further back historically than is generally thought. The engineers who participated in this great movement and escape from weight bearing walls had already been accomplished by the Chinese during the previous two or three thousand years. Iron tie-bars were often used to secure pillars in the late medieval and Renaissance vaulting. Cast-iron beams were employed as furnace lintels in the 17th century England. Enormous wrought-iron roof-trusses were installed in certain French buildings before the Revolution, and the wrought-iron armature systems was carried out extensively in France from 1667 onwards. High buildings showed no sign of leaning over or collapsing even though they shook and vibrated in strong winds Cast iron, wrought steel were used in the first ‘skyscraper’, such as the ten-story Home Insurance Building put up in Chicago in 1884, and the complete steel skeleton followed soon afterwards. This type of construction makes it possible to brace the walls of the building by transparent sheets of glass. The rebuilt Cathedral at Coventry shows today how dramatic the result can be. From ancient times the curving roof ’front’ of Chinese building was the longer side, instead of (in Egypt, Greece, and Medieval Europe) the shorter one. European buildings were meant to be approached from their longer sides, as in the Palladian villa, or dormer windows in small town houses.

The Magnet.

Several old Greek and Roman writings claim that the word magnet derives from Magnes the name of a shepherd who

noticed one day that the iron nails in his shoes stuck to certain rocks. Plato wrote about 400 B.C., he has Socrates say, "*there is divinity moving you like that contained in the stone which Euripides calls a magnet*". Clearly the aim of Socrates is not to explain the forces of magnets he is discussing the inspiration of poets using magnets as an analogy. In "Natural History" a comprehensive description of Nature 77 AD. Pliny writes. "*For what is more strange than this stone. In what field has nature displayed a more perverse willfulness. She has given to rocks a voice - she endowed the magnet with sense and hands* The eleventh century Muslim scholar Ibn Hazim Arabic on the subject of love. He wrote. "*My eyes find nowhere else to look but at you. Like what happens with the lodestone and the pieces of iron.*

Changing direction right and left in accordance with where you are".

("Ring of the Dove", Ibn Hazim. E.J. Brill 1944)

Inventions in China.

The ancient civilization of China gave the world a number of great inventions of which the most prominent were paper and gunpowder. We have an account of Chinese ceramic moveable-type printing in the 1040s. Printing was brought to a high state of perfection in Korea through a succession or royally subsidized experiments in the early fifteenth century. When printing evolved in East Asia its potentialities for changing' the face of the state' caused the Chinese government to authorize printing of standard texts to control education – often repeated but with little success. Although the Chinese mind possessed under such a condition is said to posses but few elements in which magic could strike root and throw out ramifications & influence.

Under the Emporer Hoei Ti about 304 A.D. a mystical sect arose in China called themselves “the teachers of emptiness and nothingness of all things” they exhibited the art of binding the power of the senses and produced a condition they believed perfection.

The Study of Magnetism in China.

The study of magnetism was the greatest Chinese contribution to physics. The Chinese had developed a compass like device held secret a 1000 years before the Europeans discovered it in the 1200. The introduction of the use of the needle against the lodestone itself, implied another fundament discovery for science that of an induction process. For centuries the use of magnets in China was limited to divination processes of imperial magicians. This science of magnetism developed primarily in an agrarian-terrestrial rather than maritime civilization. The adaptation of the compass by Chinese sailors may have been retarded by the fact that river and canal traffic predominated in China over ocean voyages. Geomancy known also as the science of 'winds and waters' *(Jeng shui'),* meant not only the winds of every day life, but rather the *chhi* or *pneuma* of the earth circulating through the veins and vessels of earthly macrocosm. The waters were not only the visible streams and rivers, passing to and fro and out of sight, removing impurities, depositing minerals, and affecting for good or bad the homes and families of those living on its shores. Geomancy led to the minute appreciation of the topographical features of any locality, the shape of the hills, the directions and windings of the streams, the building of pagodas on conspicuous eminences and the city walls. The protection of a site from harmful influences was of prime importance, and the achievement of a balance with the Yang and the Yin.

Several methods of deriving compass-points are mentioned by *Shu Shu Chi* of +190, and *Kuei Suan* where the description includes a 'needle' which constitutes an

important piece of evidence in the history of the Chinese study of magnetism.

(Science and Civilization in China, Vol 3 page 140)

In 2634 B.C. The Chinese Emperor Hoang-Ti was at war with a tributary prince named Tchi. In order to escape defeat, or its consequences. Tchi-Yeou raised a dense fog which produced disorder in the imperial army – an anticipation of the smoke-screen of modern times. But Hoang-Ti constructed a chariot upon which stood the figure of a man with his arm outstretched, and this figure being apparently free to revolve on its vertical axis, the arm always pointed south. By this means, the emperor was able to locate the direction of his enemy's retreat, and Tchi-Yeou was captured.

The Sung archaeologist, Wang Fu, mentions techniques using the diviner's board known as 'cosmic mirrors' and the magnetic compass and chess. Describing these mirrors, Sung examines various compass points, and separate azimuth points divided into groups of three. Then if coordinate lines are drawn across the space enclosed, nine small squares would be formed.. There are intersecting points of the coordinates (*tsho tsung ching wei*), and on the background of the mirror the five sacred mountains *(wu yo)* are sometimes represented. This perhaps relates to coordinate systems and that of cartographic practice.

There were certain islands which ships could not pass if they were constructed with nails, or gates which men could not pass through if they were armed with iron weapons. There were statues of iron that floated in midair, suspended by magnetic attraction. In the second century Ptolemy wrote of these magnetic islands, which he placed between Ceylon and Malaya, and we find a similar story in China in the Nan Chou I Wu Chih two centuries later. Afterwards the story is often repeated. Most likely the idea had its roots in purely

Chinese origin. The early descriptions of the glories of Chhang-anSian) say that the A Fang Kung, one of the palaces of Chhin Shih Huang Ti, had whole gates made of lodestone in order to arrest those who tried to enter with concealed weapons. The use of such a device in the defense of such gates is referred to in the Biography of a Chin officer, Ma Lung. The general notion of such pearly gates appears be connected with mythological ideas about the escape from reality. Similar stories of suspended images, magnetic islands and mountains occur in Arabic writings. The development of the inverse square law of magnetic force was made by J.A. Dalla using an exceptionally large loadstone presented to the King over a 100 years before by the Emporer of China.

The nearest approach to a discovery of magnetic-polarity in Europe was the observation that in some cases the magnets would repel iron. This was known to Pliny, to Marcellus in the 5^{th} century, and to Joannes Philoponus in the 6^{th} century who was the first proponent of the impetus theory of dynamics. There are references to repulsion and attraction of magnetised chessman from China, where pieces repel or the pieces ‘mutually hit’ each other. The word used in most texts for attraction is ‘yin’. The *I Ching* scholars intuited that no matter how repeatedly the purification process of a material substance might be carried on, there would still remain the positive and the negative combined together. Perhaps few of them could have been conscious of the fact that the north and south poles of a magnet are reproduced no matter how much the magnet may be divided into smaller magnets.

The Magnet, Divination, and Chess.

The whole story of magnetism in China would be incomplete without exploring the fields of divination-

technique from which games such as chess derive. For there are indications that they alone contain the clue to the first use of magnetism. Why should anyone have thought of making a model of the Great Bear, and of placing it on a board? Why was it shaped from a bar of magnetite into the form of a dipper, is easier to understand. There were many other ancient systems of divination which involved the use of ‘pieces’ similar to chess-men’, often represented as celestial bodies. The whole process of thought begins to reveal itself.

The Fighting Chess-Men of Luan Ta.

China is the only civilization where a close connection between the magnet and ‘chess’ can be shown to exist along with a connection between astronomical-astrological symbolism. The stages in the discovery of the magnets directive power involved various war-games including (a) throwing of the pieces on the board and noting where they came to rest (b) the decision to make some of the pieces from magnets because of its attractive powers. The first steps in the process of discovery were conducted in the 2 century and present a train of thought, which has come down to us in five versions. In Shih Chi*.. It was this fact that made him magician and Pharmacist Royal to the Prince of Chiano-Tung.....My master maintained that yellow gold can be produced (artificially), that the breach in the Yellow River can be closed*, *That the herb of immortality can be, and that the hsien can made to appear. But all your subjects are afraid that they will meet with the same fate as the Perfected-Learning General, so none of them dare open their mouths. How then should I dare to speak to you of my arts?... At the end of the interview, the emperor asked luan Ta to demonstrate one of his lesser arts by making chess-men (chhi) fight automatically, and indeed they did mutually hit against each other (hsiang chhu chi)*

An almost identical account with which the Thang commentator Sauma Chen added to the Shih Chi text follows: The lodestone lifts animates (thi) chess-men. *The blood is rubbed up with needle-iron (fillings) and pounded to mix (hen when) lodestone chess-men are set up on the board, they will move themselves and bumb against each other (hsiang thou).*

Another excerpt preserved in Thai-Phing Yü Lan, ch 988 is a little different. *Take the blood of a cock and mix it with iron (fillings) from the grinding of needles, pounding it with lodestone powder. In the day-time, put the paste on to the heads of chess-men (chhi) and let it dry in the sun. Then put them on the board and they will constantly bounce against and repel (chu) one another.*

Perhaps in association with the chess-men, lodestone-spheres and iron mechanisms were underneath the board. Ko Hung live in the Lo-fou Shan mountains north of Canton where he pursued studies in alchemy; Luan Tas's magnetized chess-men have been mentioned in the following from Ko Hung: *Playing with the three (sets of) chess-men, in order to foretell the success of failure of military enterprises.* Under the Shih-Lou Feng peak there is a stone as smooth as a mirror, and on it there used to be 18 chess-men, some black, some white. They moved to and fro and pushed each other about, yet if you tried to pick them up you could not do so. This was called 'spirit chess' (hsien i)..

(Science and Civilization in China, Physics p. 315)

According to the legend of 'Alexander Romance' his father was the last of the Egyptian kings, Nectanebus the magician. It was his practice to make divination about the outcome of naval battles by floating model ships in a basin

of water. They began to move, says the text, seeming to be alive, He used his ebony wand around the basin of water to command the battle. One might venture to predict that somewhere in the vast mass of Chinese legendary material there exists some parallel account of chessmen turned mariners and gone to sea.

St. Augustine was much struck by seeing pieces of iron move about on a silver plate under the influence of a lodestone manipulated below. An important treatise on the magnet by Petrus Peregrinus in 1269 one of the finest contributions to Physics during the whole medieval period.

In 1190 Alexander Neckham said of the magnetic compass:

The sailors, morover, while they sail over the sea, when in cloudy weather they can no longer profit by the light of the sun, or when the world wrapped up in darkness of the shades of night, and they are ignorant to what point of the compass their ship's course is directed, they touch the magnet with a needle. This then whirls round in a circle until, when its motion ceases, its point looks direct to the north.

Chinese used heating to improve later overall magnetization of iron, perhaps part of a steel-making process. There were rumors in 1800 that the Chinese were 'not tormented by the variation of the needle' and that their needles do not receive their virtue from loadstone.

In such experiments by palace magicians on the smooth waters of a lake, many scholars have been only too willing to dismiss it as a monument of superstitious web-spinning. The dense cloud of ignorance which hovers over people, and exhibits in all its nakedness the globe is a huge mountain of learning without a single trace of true knowledge in it.

Geomancy is the true mother of our knowledge of terrestrial magnetism.

Magnetic Inclination.

No comprehensive History of Geomagnetic Discovery has yet been written. For centuries lodestones have been located using compass like devices. Daniel Tilas (1600) was the inventor of the Swedish mining compass for magnetic prospecting. An 18th century “Swedish mining compass” was used to locate magnetic rich iron. This and other devices are known by the acronym MAD. MADS helped the Russian locate a magnetic Rich Mountain. Mt. Magnetnaya near the Ural River. Magnet City was built nearby. Modern instruments for the determination of the components of terrestrial magnetism make use of the armillary principle, which has been employed for the determination of celestial positions before the invention of the telescope.

The first chart of magnetic inclination for the whole earth was published in 1768 by Johann Carl Wilcke at Stockholm, he called the lines ‘parallels of inclination’. Sun-dials made in Nuremberg (1450) showed marks for magnetic declination. During the same period German road-maps existed containing the figure of a compass indicating the declination In 1600 William Gilbert published (In latin) his famous treatise De Magnete, the fruit of long years of thought and experiment. In 1890 Lemstròm, put his point apparatus on tops of the Finnish mountains; it consisted of barbed wire (grounded wires with points) fastened to insulators covering several hundred square meters of the top, and was connected, through a galvanometer, with an earthed-plate in the valley. The numerous points discharge at night, sometimes visible as Saint Elmo’s fire, setup a downward current which is readily explained as a

consequence of normal atmospheric electrical vertical currents.

(P 434 Earth Currents – Geomagnetism, Sydney Chapman Julius Bartels, Oxford 1940)

The Development of the Technology of Iron in China

“The sharpening is brought to perfection by the grindstone. But after several thousand sharpeinings on the grindstone, the steel may wear away and the iron appears” “The best of all swords have a thousand times refined steel” Thien Kung Khai Wu.

It seems evident that in China iron could be melted and cast almost as soon as iron was known. This is in contrast with the course of events in the rest of the world where two and a half millenium elapsed between the first iron-working and the first casting of iron. In the times of Fan Wen-Lan we find an inscription on a meteorite of -211, which would have necessitated a steel implement, and the habit of shaving of hair or beard, was in general use, despite formerly being outlawed. In -512 the people of *Chin* were forced to contribute more than a quarter of a ton of iron for the purpose of casting iron cauldrons used in battle. The penal laws of Fan Hsüan-Tzu were inscribed or cast on the ting, in a different tradition on bells *(chung).* In – 312 man cooks his food in pans of metal and pottery and ploughs with an iron share. The exchange of commodities is not harmful to the potter and the founder. The foundations of five furnaces at Han was identified by the presence of Han tiles with geometrical patterns, and Han pottery, and scroria and slag, where the fuel was charcoal. The ore was most likely derived from two localities, one yielding red hematite, and the other magnetic sand. It is possible that ore’s were fused to make statues or vessels. ”Furnaces for smelting iron ore have something magical about them, therefore the iron-masters

must pay-worship to them (to the presiding spirit)". The primitive smith added or removed carbon, and other elements, knowing only what desired properties he wanted to obtain and relying on his skills and experienced eye. A spirit Juan Shih was said to have got his art from a spiritual visitant (a Metal Spirit) who taught him the proper combination of fire and water.. The addition of small amounts of "black earth" *(hei thu*), or the "black hair". The use of coal containing phosphorous reduced the melting point of iron from 1130 degrees to 950 degrees. The metallurgy of steel in China, not only for weapons of war, but for a thousand other uses. As the varieties of steels increased, the Chinese were able to improve the properties of the shock weapons, and combining the types together in highly composite welded blades. This was characteristic of other cultures the Celtics and in Japan. It seems likely that they broke through many limitations on the total iron and steel production. Great skills were involved in the manufacture of large cast-iron pans with extremely thin walls and therefore economical of fuel. There were minor domestic industries such as wire-drawing and needle making. There is a famous passage on iron tax which says that every woman needs a needle and a knife, and every farmer needs a hoe and ploughshare, and every cartwright has his axe, saw, awl and chisel. Iron and steel commodities became common in the 3d century in China. In about –130 metallurgical deserters from the retinue of a Chinese embassy were spreading the technique of iron-casting to the countries of Ferghana and Parthia. Among all the inventions which contributed to the development of iron was the construction of bellows. Eventually the double-acting piston bellows was used similarly to the double cylinder force pump of the Alexandrian Greeks for liquids. The oldest known water-mills in China were not used for cereal grinding but wheels to power blowing engines in iron-works. At that period it involved a large flywheel on the same shaft as the

horizontal water-wheel, working by means of a belt and smaller pulley, to convert rotary to oscillating rectilinear motion. Apparatus answering to this description indicate that the Chinese hydraulic blowers in the time of Vitruvious and Heron were far in advance of anything the western world used until thirteen centuries subsequently. The largest iron-casting ever made was erected in +954 in China. Cast iron was also frequently used for making large bells. Buddhist architects did not hesitate to make use of iron when building their pagodas. The oldest iron pagoda dates form +1061, and is 70 ft high and has thirteen stories and is said to weigh 106,00 pounds (53 tons). The walls are made of cast-iron plaques fixed to a skeleton framework. Another one in Shantung has eleven stories. Cast iron was also used for the tiles of temple roofs. Chinese suspension bridges were known in the +6th century. The first iron-chain bridge in Europe was thrown across the Tees river in England in +1741, and a similar bridge capable of carrying vehicles was built in 1809 across the Merrimac river in Massachusetts. Among the most extra-ordinary use of cast iron were set on foot by the great empress Wu Tse. A pagoda temple was completed in +688. The lower stories rested on huge wooden pillars and the uppermost one by nine cast iron dragons. Another pagoda was built upon a base consisting of a “hill” of cast iron 170 ft in circumference and 20 ft high. The total amount of metal used was about 2,000,000 catties (1325 tons).

Joseph Needham, *The Development of Iron and Steel Technology in China*

TLV-Mirrors

Determining the exact nature of an ancient instrument from the name can be difficult. The determination of time by most sundials depends on noting the direction of the shadow. Later, in the $+6^{th}$ century gnomons utilize shadow lengths of vertical gnomons pointed towards a celestial pole to determine equal intervals of time. The further elucidation of this subject brings up another enigma of Chinese archaeology, namely, the significance of the so-called TLV-mirrors' of the Han Dynasty. Designs given this name are frequently found on the backs of Han metal mirrors. The earliest of such mirrors are from about –250. A scene from the Wu Liang tomb-shrines depicts what has been recognized to be a scene of a magical theatrical. In the background a board which bears the TLV markings is apparently hanging on the wall, while on the ground, carefully drawn to indicate that it is horizontal, is a small table believed to be identified as the diviner's plate. This consists of a square representing the earth surmounted by a rotating disc representing heaven. There is thus an association of divination with games that we find to have been of great significance in relation to the discovery of magnetic polarity.

Shadow-Play and Visions.

Various accounts of illusions being produced and the evocation by a magician of similar effects have been reported in Chinese history. The story is told in both Shih Chi and the Chhien Han Shu., in –121.

The emperor could not stop thinking of her. Shao Ong, a magician from Chhi, said that he could make her spirit appear. So after certain offerings of wine and meat had been set forth, and when certain lamps and candles had been disposed about a curtain, the emperor took his place behind another (diaphanous) curtain. After a time he saw indeed at a distance a beautiful girl sitting down and walking back and forth. But he could not approach her. How was it that she walked so gracefully, yet seemed to come towards me so slowly?.. It is likely that the Han procedure was some sort of shadowplay (ying hsi) which have been traditional for centuries in many Asian countries. In light of Chinese optical knowledge, it is possible that someone had the idea of placing one or more lenses at the pinhole of a closed chamber, and that they continued to refine this procedure. This was the new element of the magic lantern of Cornelius Drebbel or Athanasius Kircher in Europe (1630-1640). Another ancestor of Cinematograph was a variety of zoetrope, which may have originated in China. A light canopy hung over a lamp, and bearing vanes at the top so disposed that the ascending convection currents caused it to turn. On the sides of a cylinder there would be thin panes of mica or paper with painted pictures on them. When the canpy spun around fast enough, the image would give an impression of movements of animals or men. Such devices embodied the principles of frames per second and the rapid succession of images. Hsi Ching Tsa Chi speaks of the sparkling of scales of turning dragons after a lamp was lit. It also describes what must have been small windmill or air turbine, and is described as follows: There was a jade tube 2ft. 3 inches long, with 26 holes in it. If air was blown through it from of a screen, one after another, with a rumbling noise. When the blast stopped all disappeared.

Called chao hua chih kuan *(the pipe which makes fantasies appear)*

Camera Obscura *(Science and Civilization in China*, p. 99 Physics Vol 4)

During the period of Thang and Sung there was much interest in experiments with pinholes and darkened rooms. The identification of three separate radiation phenomenon were investigated (pinhole focal points and burning point). We can see the phenomenon of an image being inverted by the following examples. When a bird flies in the air, its shadow moves along the gound in the same direction. But if an image is collected through a pinhole in a window, then the shadow moves in the opposited direction to that of the bird. The bird moves east while the shadow moves west. If a concave mirror or a spoon reflects an image close to it, the image will appear upright, but if the object moves further and further away, a point is reached where the image disappears and after that appears inverted. The Yu-yang Tsa Tsu said that the image of the pagoda is inverted because it is beside the sea, and that the sea has this effect. Actually it is a normal principle that the image is inverted after passing through the pinhole. The camera obscura has been looked at at least since about 300 B.C., and both the Chinese and Arabs were interested from the 8th century on. The earliest work with the camera obscura is usually attributed to Ibn Al-Haitham. The great Arab Physicist (+965). Aristotle is said to have observed solar eclipses through it, and Leonardo Da Vinci a half century later related the phenomenon to the study of the eye.

Lenses and Burning-Lenses.

Rock crystal is pure crystalline quartz, and due to small impurities, for instance lead, often appears colored or translucent. Some kinds of quartz, the ` tea-crystal‘ (chha ching) or ` black crystal‘ (mo ching), were used in the Ming for making dark spectacles, in the same way we use dark

sunglasses today. Many rock-crystal spheres have been found at sites such as Pompeii, Nola, Mainz ect. that may have been used as lenses. Ancient quartz could only be worked like jade because temperatures high enough to fuse it and make vessels of it were unattainable. Glass, in its simplest form, is essentially a silicate of sodium or potassium (or both) and calcium carbonate), or sodium or potassium carbonate, or other alkali ingredients. At a later stage in history another form of glass was developed, lead-silicate glass. Pliny relates that glass was discovered by Phonecian merchants who travelled with bags of natron (sodium carbonate). While camping at a sandy bar where the river Belus meets the sea, near Mount Carmel, the natron got mixed up with some sand and lime and fused in the campfire. The oldest piece of glass dated appears to go back to 2900 B.C.. In 2500 B.C. solid glass objects were quite common in Egypt and Babylonia. In the Roman world, centered on Alexandria the glass industry was a great one, and some of the products reached China. The earliest Chinese glass likely reached Asia about 700 B.C.. Glass ` eyebeads‘ based on European design became popular in China around 480 B.C. and precede the opening of the Old Silk Road by some two centuries. It seems clear that bi-convex lenses of glass could be artificially made already in the 3d century B.C. A curious story on conjuring up tricks using ice as a burning lens has been mentioned in China. It has sometimes been mentioned that the invention of spectacles was Chinese, and that the invention of eye-glasses antedates European by about a half century. Ai-tai resemble large coins, and their color like mica. When old people are dizzy and their sight tired, and they cannot read the fine print, they put ai-tai over their eyes. Then they are once more able to concentrate and the strokes of characters appear doubly clear. Ai-tai come from Malacca in the western regions.

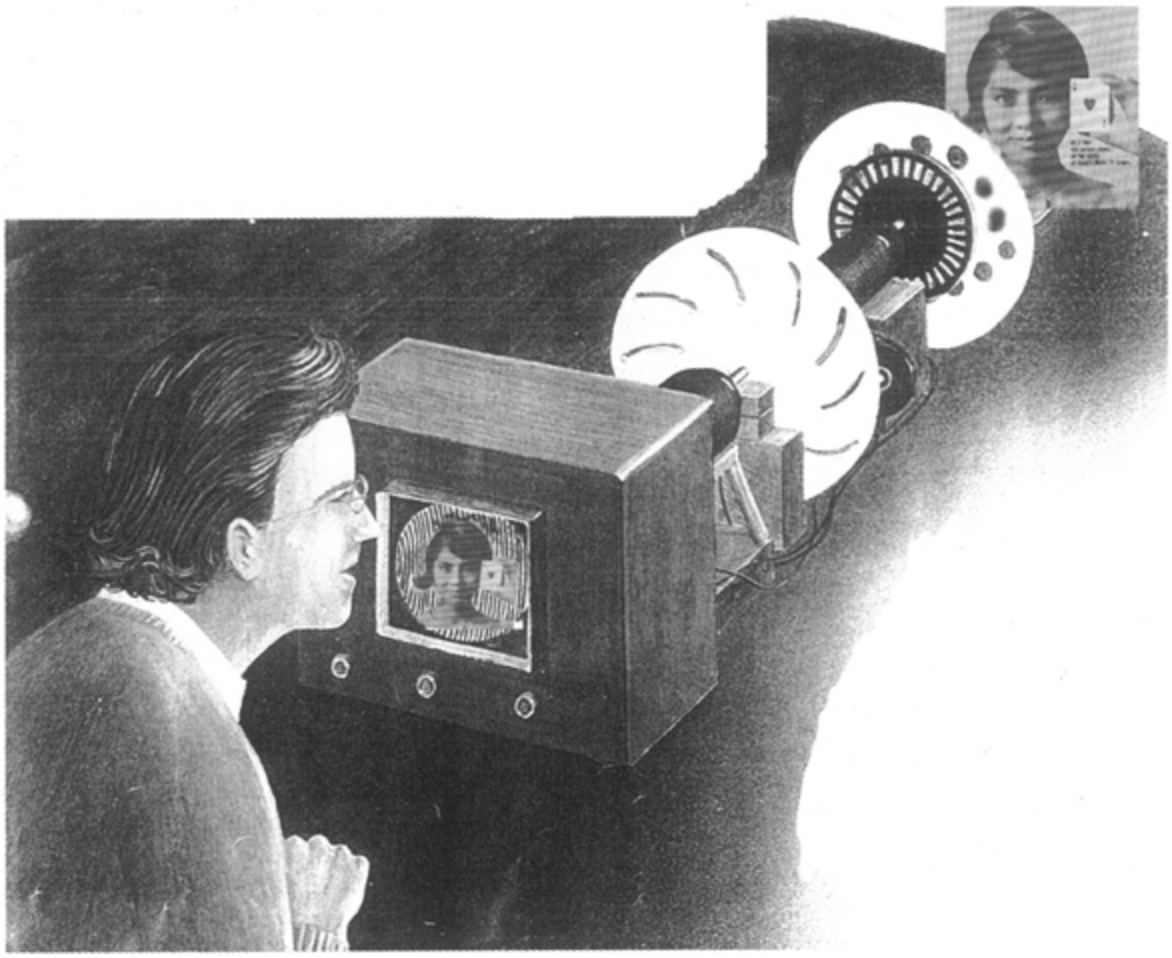
The establishment of the intellectual supremacy of the Muslim or Arabic peoples during a period extending from the middle of the eight century to the end of the eleventh - more than three centuries. In the thirteenth century the symptoms of Christian vigor and originality were multiplying and by the end of it, when its respect for Muslim achievements was greatest, the genius of Western Christendom had already found itself. This is of very great importance because that genius has been ever since the main, almost the exclusive, creator of modern science. Modern Europe was born when at 21 years old and elite statesman name Berhard became a monk in a monestary in the year 1112. In the following year monestaries showed up all over Europe and with the close of the year 1200, 700 monastaries littered Europe The “Doomesday Book” appeared in 1000 copies. There were 5624 water-mills, mine-pumps in Polen, tin-mines in Cornwall.

Shadows

Introduction to the History of Science George Sarton 1927
(Archiv fur Geschicte der Naturwiss Vol 2, 154 1909)
Wiederman - “Uber eine optische Vorrectung” Apropos of Ibn Hazim’s comparison of the world with Khayal-zil, what we call ` “Chinese Shadows” - Zwei naturwissenscaftliche Stellen aus dem Werk “uber die Liebe - uber das Sehen und den Magneten (Beito 42 Vol 471)

The Mechanical Television

Paul Nipkow of Berlin reported inventing the first mechanical scanning disc in 1884, which was the forerrunner of many mechanical scanners used in television transmitters for many years thereafter. This device consisted of a metal disc having a series of holes arranged in a spiral. When the disc revolved, light impulses were received through the holes. These light impulses fell upon a selenium cell that was excited in accordance with the intensity of the light falling upon it. The receiving station converted this signal to neon light which in turn passed through a scanning disc revolving in sychronism with the transmitter. The light coming through the holes fell upon a ground glass screen and produced an image of the original picture.



In 1828 John Logie Baird sent his first television pictures across the Atlantic. His camera was a rotating disc that divided the image up into 8 lines.

Mind and Human Intellect.

The human intellect evolved through the selection of whose adaptiveness resides in those functional capabilities we label as ”mind”. The mind’s ability to store and recall past events, to perceive patterns, and hence to predict future events such as the coming seasons, we call memory. Along with memory, the mind evolved an ability that enormously enhanced its usefulness, namely metaphoric, or symbolic communication. At first gestures were used to convey ideas, then about 200,000 years ago, symbolic vocalization became possible, giving rise to language, and thus the social phenomenon, allowing the transmission of accumulated knowledge. As man learns to apply his understanding for practical purposes, he is, in reality augmenting his ability and his need to communicate as well as his ability to think and create.

The mind then has the potential for adaptive behavior ”learning” and ”knowledge”, that encompasses what it concerns are stored values regarding concepts that are ”important”, including what belongs to a social group of needs. Without the satisfaction of these needs, humans may become emotionally depressed and ill, or angry and violent. Because reality is the result of processing information that our sensory system is actually exposed to – it is too complex for all cultures to perforce, and they must therefore choose what to notice, and filter out the rest. This often requires a legal system to ”govern” behavior and gives rise to ”politics”. Changing the way we think, occurs at two levels. One is personal learning, by which individuals hone their understanding to fit their own niche. This sort of learning usually occurs in schools, where society modifies personal

ways of thinking. The other level of learning occurs when an entire society changes its way of thinking. By replacing an old way of seeing things in the world with a new one, society adapts in a way that many believe is essential for humans to survive in the decades ahead. The Golden Age of Greece (500-400 B.C.) and the Renaissance/Enlightenment (1500-1800 A.D.) are two historical examples from Western World history, which often have been opposed and resented for generations. Our psychic attachment to the familiar status quo brings heavy costs to a society attempting rapid change. Our situation is new. The future of humankind involves a goal-directed trial and error evolutionary process of learning how to deliberately ”change their minds” rapidly enough to adapt to new crisis. Examples of people already doing this (e.g. the Indian state of Kerala, the Mindragon cooperatives in Spain, Grameen Bank in Bangladesh) offer visions to other societies experiencing difficulties with the process of social change.. Such survival may include integrative tolerance coexisting and cross-fertilization of each other.

Encyclopedia Of The Future (Mind: New Modes of Thinking, page 621 Macmillan 1992).
Physical Control of the Mind (Towards a Psychocivilized Society, Jose M.R.Delgado, 1969)

The Paleomagnetic Signal.

Man sees nature from the point of view of being a source of new technology where such developments are naturally taking place. During geological history the changes that magnetic species undergo during their formation and their subsequent history at later times insure that they become a receptive media for the paleomagnetic signal A model for weak ‘magneto-mechanisms’ lies within the ambit of rock and mineral magnetism which provide a faithful record that can be maintained over geological time. When V. Poulsen invented magnetic recording 100 years ago, the mineral world had anticipated him by several thousand million years. It is likely that he was inspired by the discovery of the magnetic recording properties of rocks only a few years before. A magnetic record is a memory system which must be magnetized to allow it to respond to external conditions and the magnetization suppressed to maintain the record. Information is written into the elements of the now obsolete digital magnetic core to changing magnetization. The resistance to magnetization must be high enough to reduce the probability of any element changing its magnetic state during the writing to another core. The memory may be sensitive to the effects thermal agitation or magnetic fields. In the case of ‘moving surface’ magnetic memories, the exposure of the surface to magnetization of magnetic grains is the recording process. The developed techniques of rock-magnetism find application in petrology and other sciences. Magnetic fields have two sources – the flow of electrical current and the ‘leakage’ field from a magnetic source. The former is believed to be the origin of the Earth’s magnetic field. In the field of ‘biomagnetism’ magnetism is the means of investigating the small magnetic particles which form part

of the nervous system of many animals. Magnetic navigation in the animal world is an example recently added to the list which includes ranging using sound waves, servomechanics, information transfer by electrical signals, optical devices and lenses.

“That is my conviction, that is what I believe – since such is the lightning-rapidity of the soul, such its wonderful memory of things that are past, such its ability to forecast the future, such its mastery of many arts, sciences, and inventions, that its nature, which encompasses all these things, cannot be mortal; and since the soul is always active and has no source of motion because it is self-moving, its motion will have not end.. And a strong argument that men’s knowledge of numerous things antedates their birth is the fact that mere children, in studying difficult subjects, so quickly lay hold upon innumerable things that they seem not to be recalling and remembering them. This is substance is Plato’s teaching.” (1)

(De Divinatione II Vol 20, page 91 Cicero)

Magnetite and Slags.

Magnetite is often observed as a furnace product, in slags, and in sintered hematite ores. The hammer, smithy, or iron-scale of blacksmiths and roll-scale of milled iron is largely magnetite. Bricks, vitreous clay ware, and porcelain acquire a permanent magnetization parallel to the earth’s magnetic field because of the formation of magnetite during the firing. Magnetite has been prepared artificially at ordinary room temperatures by the oxidation in alkaline solutions of $Fe(OH)_2$ and by other alkalines and ferric and ferrous salts. Other ways of preparing magnetite include the oxidation of iron at high temperature in air or steam. The name magnetite is derived from the locality Magnesia, bordering

on *Macedonia.* Pliny mentions *Magnes,* who according to legend first discovered it, by finding, on taking his herds to pasture, that the nails on his shoes and the iron ferrule of his staff adhered to the ground.

(The System of Mineralogy of James Dwight Dana and Edward Salisbury Dana, Yale University 1837-1892, Vol. 1, page 705)

Magnetic-Concentration-Teehnology

Magnetic separation, which is a engineering practice of long standing, is used for the concentration of magnetic materials. In the past, magnetic separation equipment, designed with magnetic materials, played and important role in the production of iron. The separation is accomplished by passing mixtures through a magnetic field, which leads to a preferential retention or deflection of the material which is to be separated. The same objective is often achieved in a variety of ways. In magnetic separation the main factor depends on the motion of the materials in response to the magnetic force, and competing forces, namely gravitational, hydrodynamic, inertial and centrifugal forces, that all contribute to the overall scenario of magnetic separation. The Chinese harnessed the directional properties of magnets as early as the first century B.C.. Magnets embrace the oldest magnetic material known to man, i.e. magnetite or lodestone, as well as commercially significant fine-particle magnets. Magnetic material is capable of storing a certain amount of energy. The early history of magnetic separation is closely connected to using these magnets to recover strongly magnetic materials (mostly iron). Magnetite is the most fundamental and important magnetic oxide in rocks. Its magnetic properties have long been studied and contributions to magnetism have been classified on the basis of ferromagnetism. Magnetite is therefore an inverse spinel, whose ferromagnetism fundamentally results from interaction between two sublattices. Ball, Norten, Edison and others applied this principle and process even further to the separation of iron ore utilizing electromagnetic drum separators. Faraday discovered that all matter responds to the presence of the

external magnetic fields, and this has brought the extension of magnetic methods of separation to materials whose magnetic susceptibilities is classified as nonmagnetic, diamagnetic or paramagnetic. The ferromagnetic slurry fed into the magnetic separator will thus be split into two or more components. The performance of the magnetic separator can be seen by the recovery of magnetic material in the mags relative to that of the feed, where a wide gap exists between the magnetic properties of the materials. The useful product may be either the magnetic or nonmagnetic fractions. Various types of rotating drums have been employed for a wide variety of applications. Where the drums rotate around stationary magnetic elements. Magnetic susceptibility of mixtures can be affected by the application of ultrasound, which causes a reduction of magnetic susceptibility. Thus Ultrasound can be used to change the magnetic properties of a material with the aim to improve the efficiency of magnetic separation.

Throughout most of the nineteenth century Putnam County, New York was mined of its magnetite deposits. These deposits occurred in the three belts and two remote locations. Magnetite was extracted at fourteen primary mines and numerous minor locations using a variety of techniques. Ore mined was transported by wagon, railroad and ships to both local iron furnaces in Westchester and Putham Counties and more distant markets in New York, New Jersey, and Pennsylvania. With the westward migration of the iron industry in the 1880's toward the lake area, most of the Putnam County Mines ceased to work. Those that remained open invested in extensive open- pits and magnetic concentration technology, however, by 1900 all mines had been closed.

1.) Magnetic Methods for the Treatment of Minerals, J. Svoboda, page 1, 1987)

2.) Industrial Application of Magnetic Separation YA. Liu, page 8, 1979)
3.) Magnetite, Mining, And Magnetic Separation, The Industrial Archeology Of 19th Century Iron Mines In Putham County N.Y. Musser, James.E. Rutgers University, New Brunswick, N.J. Geology Dept.)

Man-Machine

Quite early in Greek thought the attempt was made to denote the idea of “man-machine” to encompass physical organization and the mechanization of some aspects of mental activity. In earliest doctrines on the subject they identified a breath of air as the origins of thought. In Empedocles (ca. 490-30 B.C.) we find the rudiments of a psychology of sensation based on exclusive physical factors. Epicureanism completed to its conclusion, within the technical limits of Greek science, the type of psycho-physical explanation initiated by Empedocles. From the Epicurean standpoint, all psychic phenomena were envisaged as the effect of specific yet undefined atomic structures. The function of various senses and the faculty of sensation itself were explained on the same basis. It was supposed that all objects emit stimulacra of themselves composed of a subtle grouping of atoms and that these replicas on entering the sense-organs impinge upon the soul as sensations and ideas. In the impact of ancient medicine on the formation of the man-machine, Galen (129-ca. 199) played an important role. He laid the groundwork for physiology of the nervous system by being the first to demonstrate experimentally that the brain was the point of origin of the multitude of nerves which controlled, by specific functions the various vital, sensory, or motor activities of the body. Galen launched a long and adventurous hypothesis of the nervous network, mechanically receiving sensory messages from all parts of the body and sent back to its voluntary and involuntary commands. This model construes man as a sort of hydraulic-pneumatic machine effecting the privileged status of water-technology in Greco-Roman times.

It remains finally to show how the man-machine was related in the achievements of ancient technology, to what degree the latter succeeded in simulating animal or human behavior by mechanical means. Machines of antiquity generally applied to machines for lifting, (pulleys, winches, cranes, levers).engines of war (catapults, siege and defense equipment), pneumatic and hydraulic contrivances (water-clocks, fountains, pumps, water-organs), presses and weaving-machines.

The Automatic Theatre.

Truly automatic devices were rare, and when discovered belonged mostly to toys and objects intended for entertainment. One report of such a remarkable machine deals with the “automatic theatre” of Heron of Alexandria who was perhaps the most versatile mechanist of the Greco-Roman period (second half of the first century AD.). The theatre in question, is described in his treatise Peri Automatopoletikes, featured a five-act tragedy based on the legend of Nauplius, it was performed with the appropriate dramatis personae, scenery changes, sound effects, ect.., all of it automatically controlled by a system of strings, reels, cogs, and levers attached to a motor consisting of counter-weight that descended slowly and uniformly.

Most of such inventiveness remained outside the main stream of science. It may for one thing have come too late, since the original speculations had already been dealt out. Behind these attitudes there was in effect a permanent sociological factor, which would have rendered the man-machine idea “unthinkable” even if it was contrary to what was actually true. All the logical and technological components had already been given. The Greek intellect its own enslavement, many of them a man reduced to a machine.

The man-machine idea remained in abeyance during the period of almost twelve hundred years when reigning Christian ideology checked suppressed whatever of the past remained uninteresting to its own position. It was not until La Mettrie's, L'Homme machine (1747) that the idea of 'Man machine' which had lay dormant showed up as a 'machine that winds its own springs', man an assemblage of springs that are activated reciprocally by one another.

Electrical Induction.

Perpetual motion by electricity or by magnets stems from a very early date. The reciprocal relations between electric and magnetic phenomena were known to the Arabs. They were aware of the parallel, already drawn by Galen, existing between the transmission of the electric fish and the electric ray and that of the magnet. Arabs used a balance to test the efficacious and attractive properties of magnetite. In ancient times man discovered electromagnetic induction, or creation of electric currents in a conductor by changing currents or moving magnets in the vicinity. A magnetic field can produce electrical phenomenon. If one moves a magnet near a wire or conductor, or moves a wire or conductor near a magnet, an electrical current is produced in the wire or conductor, and this is called induction. An electrical dynamo uses some form of energy feks. a waterwheel to rotate an axle in connection with electrical wires and the poles of magnets.

Two Scieritifc Inquiries Into the Work of Ibn Hazim About Light, the Shadow and the Magnet

The outstanding results of investigations of the Muslim and Arabic peoples was the establishment of their intellectual supremacy during a period extending from the middle of the eight century to the end of the eleventh. The works of Ibn Hazim which may be called the earliest histories of religion in any language. The greatest Muslim statesman theologian, and historian, scholar and one of the most original thinkers of Muslim Spain.

Born in 994 in a suburb of Cordova, Ibn Hazim spent his early years in the surroundings of the harem. Until the age fourteen the he led a pampered and easy life, high-strung, he flourished at Cordova. He mistrusted those internal recesses of the soul in which are hidden unexpressed and unexplainable intentions, double meanings whose ambiguity leads to indecision. His experience as an adult of those in power seeking power confirmed in him a scepticism. The ideas which govern all his works were controlled by these basic reactions to humans. It is in friendly relations that verbal statements may be taken at their face value, without any need to suspect something left unsaid or thoughts skillfully and shrewdly disguised. Finally, Ibn Hazim relies on his acute sense of reality, this reality created by God has much to teach men, provided that they know this and are willing to follow its advice.

Ibn Hazim had read widely, and he reveals that he had himself carried out some of the inquiries and research necessary to gain this knowledge. His personal genius is based on considerable powers of memory and of systematic

construction, in which the mass of details, always are well marshalled. He mentions a few words about agriculture in Spain, concerning the parable of the grain of the mustard seed in the Gospel, he has conducted researches on the size of the plant which grows from it. Concerning its size, he mentions a *mudd* which he has seen in a family and establishes through whose hands it has passed in succession, until he demonstrates that it came from Medina, dated from the time of the Prophet, and constituted an authentic and standard measure. He presents a summary of Aristotelian logic, but it should not be concluded from this that he understood it in the spirit of Aristotle. The logic of Aristotle is closely concerned with language; being an instrument for the analysis of linguistic expression, and makes a point of mentioning that what he obtains from Aristotle is common to all languages, and hence can be of profit in the study of Arabic. Concerned with the problem of spiritual education as a means of saving and promoting human culture. He demonstrates typically that all sciences demand research which is not possible without denouncing a life of pleasure, and that their use is to lead man to victory and a wellbeing in the next world. Lies and error are obviously linked to speech, he opposed all the theories which explained syntax by 'hidden meaning'. The psychological intentions of the speaker or the listener should not interfere with the meaning of the speech, the only element which has any value. He considers that the artificial nature of consciousness always constitutes a barrier. He therefore exhorts man to escape from himself in order to attain a purely objective reality. No person possesses a secret concerning religion. It is necessary to believe in the scales, in the basin, in the pages, on which the angels record the actions of men and in the final rendering of the account of those acts all this is real. Examples of this account: If a man thinks of a good action and does not do it, this is recorded to his credit as one good

action; if he performs it, it is recorded as ten; If he thinks of a bad action and refrains from committing it for God's sake, this is recorded for him as a good action; if he is forced to refrain from it or refrains for any other reason, it is not recorded at all; if he commits, it is recorded against him as one bad action. God's knowledge is eternal and extends to all that is and all that shall be, and all which will never be. He who makes necessary the necessary, possible the possible. Freedom belongs to man while still remaining in the hand of God.

About an Optical Apparatus:

Wiederman writes - „Uber eine optische Vorrectung" Apropos of Ibn Hazim's comparison of the world with Khayal-zil, and what Sarton has called "Chinese Shadows". Widerman writes:

Told me the following of Professor Goldzhier found the source and author regarding the optical apparatus and pictures for your story of optics.. Ibn Hazim said in Cairo: for you, from what I have seen the earthy world knows, it is like a shadowplay and these are like pictures from a wooden wind-mill like device, that quickly rotates, so that when one image appears the other disappears.

It is likely that the winning Arabian is talking about what's called the well known 'Oriental Shadowtheatre'. In the 'Optics of Ibn Haitam (Codex leidensis 1011) they are referred to as Pictures in the Mirror.

(Archiv fur Geschichte der Naturwiss, Von Eilhard Wiederman, vol 2, 154, 1909)

(Introduction to the History of Science, George Sarton 1927)

Two Scientific Inquiries Into the Work of Ibn Hazim

In the following two questions regarding *Tang al Hama (Band of the Dove)* and about life and ones journey more precise about life and learning to love from *Abu Muhammed Ali Ibn Hazim al Andalust (The Spanish) (mitgeteilt?) who lived in Spain from 994-1064.*

Of perception through the senses which it is its task to penetrate. The four senses is the gate to the conscious and the entrance place to the soul. It is ”an act of the soul” the living part of man, the part endowed with sensibility and with speech. The eye plays the role of messenger, and one knows with him the (the object). The eye is to one the excellent deliverer for one, the accurate signal, and is in one’s field of activity a watchguard. It is the true guide. Further-more, unlike the sight of ordinary things, which may not be seen clearly or the sight of which may cause distress, ”Know therefore that there is only one object to be sought, to banish anxiety, and that one way alone leads to it. Thus all of Ibn Hazim’s psychology and moral science concentrates on action, but an action purged of any internal motive and entirely by the thought of God. The proof of this is that there are many facts which we can know only if they are reported to us. This is why his sole aim, is to trap his interlocutors by means of his dialectric, to make them contradict themselves by processes which are merely splitting hairs over verbal expressions or disproving the validity of their ideas by confronting them with facts of experience which are striking. To give on example *”I have received the order to fight against men until they testify.. Only the tongue can be compelled by force”.*

About the Working Through iron and the Magnet and the Appearance of Fire and

Sparks

On two “Scientific Inquiries Into the Work of Ibn Hazim About Light, the Shadow and the Magnet”. In the following two questions regarding *Tang al Hama (Neckband of the Dove)* and about life and ones journey more precise about life and learning to love from *Abu Muhammed Ali.*

This “Beyond question is in the good will a real truth”. The soul is like the uncle whom we expect a visit from, therein he lives, it is through its exceptional nature that the soul is enclosed and surrounded and solitary, and in this way restricted in response to touch, and to feel the pulse, and to marry not these qualities. The senses are their houses next to each other, and if they touch you and live as brothers in an equal setting, they may be likened to the magnet and the iron. The power of the magnet, that with iron is closely connected. The idea of continuous movement, the idea of action over distance, the contactless effort over distance, the Islam philosophy.

On the different kinds of love they say that love is based on similarities between genes. Nevertheless love doesn’t always reciprocate. The soul of those who don’t love that which loves them, is surrounded by specific earthly attributes, hence the soul cannot feel that part of the other soul that touches it, and penetrate those attributes that form a shell and at one place breaks though it. If the soul that is enclosed is set free, both of the souls may touch one another in the same way. The soul that is released knows the origin that it has in common with it. Then the soul may strive after and tries to attract it like the magnet and the iron. The iron is not made in the same way that has to strive to the magnet because of inherent order or its pure nature, as if she had the same form and from the same element. And the magnet because of its natural power, that tries to reach that form or shape within the iron and to be attracted. The movement

that occurs is always caused by the strongest. The power of the magnet and iron tries to reach that which itself is like, but it can only do this if no obstacles are in the way. The power of the magnet and iron is indulging and following its nature because of the intention that they have chosen for it. When the hand holds the magnet it is only held back when its power is less. If you have several iron pieces to call on each other and through their shape or size have little power, they are prevented from being visible.

Just like the fire in the stone is connected in a number of natural layers, and does not correspond to the power of the fire that we have respect for, the fear for being near, and in deep contact with. Here it is parallel to a fire in the sleeve, one catches with both hands a ghost or fire. (gniest, geist)

If the magnet is very large and answers to the combined power of the iron, then its influence becomes visible again. In the same wav if the magnet and iron are merely touched and are not moved no sparks result, however the fire, in steps, first becomes evident if by reasoning they are positioned and converge and beaten (aneinander-støtz und schlagt, ground like spices). Violent fire and sparks will result. Such is the power in the stone hidden, it does not appear and is not visible without movement.

(*Zwei Naturwissenscaftliche Stellen aus dem Werk “uber die Liebe - uber das Schen und den Magneten* (Beito 42 Vol 471)
(Beitr, 43, Sitzungsber, vol, 47, 93-100, Erlangen, 1915)

Solomon King and Magician

About 3000 B.C. magic flourished in Egypt to the point where its very name passed into other languages denoting magic. In Arab tradition the Jews were the greatest magicians of all times. The Book of Enock claiming intellectual descent from Solomon and Moses. The book of Hermes said to be 42 in number, were attributed to the Egyptian god Thoth. Thoth is called Theuth by Plato, who states that the Egyptians based their religion and widespread magic upon his words. It is only recently during Victorian times that magical origins in high Asia have influenced people half way around the world. The westward sweep of the Turanian people who brought Asian ways to the Mediterranean founding the civilization of Babylonia and others. Little is known of Arab practices before the rise of Islam in the seventh century. Under the early calips of Syrian, Spain, and Egypt, a staggering mass of written material was captured from Rome, Greece, and all the other conquered nations and translated, including the systemized teachings of Aristotle. Between the 12^{th} and the 16^{th} centuries much of the lore entered Europe. According to Arab translators Solomon left a vast heritage of knowledge to his initiates, who guarded the secrets in out-of-the-way oasis. According to Arabian chronicles Solomon not only traveled through the air, but he took his entire court with him, on the original flying carpet, accompanied by the flights of birds. There are references in the Quran to Solomon becoming David’s heir and being taught the expression of birds, and with knowing the language of birds, and the use of blowing winds which moved with his command. One of his wives was a daughter of Pharaoh, king of the Land of Magic, and it has been held that it was

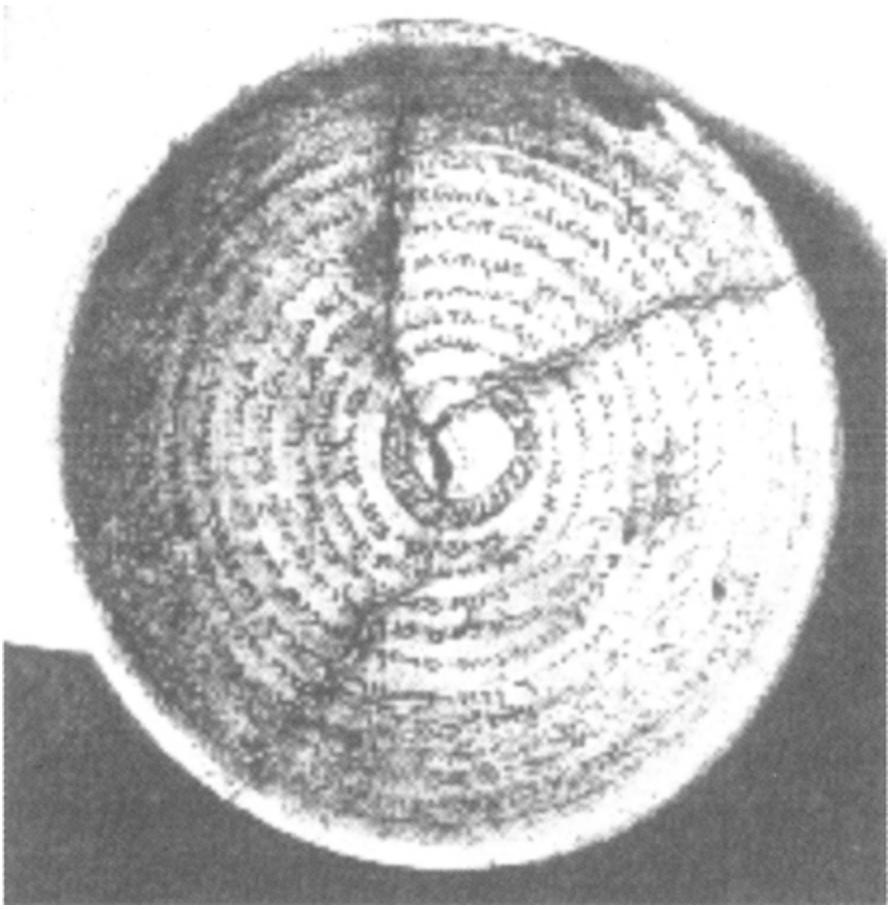
through her secrets were disclosed to the king of Israel. Solomon was thus fortunate to be able to consult magical processes. The ancient Egyptian theory of ‘Word of Power’ that commands, which is so potent that it cannot be spoken even thought. Some of the signs which are used in Solomon’s works bear a more than superficial resemblance to similar signs used in Chinese works.

“Verily, Solomon was the greatest of the magicians. He had power over the birds and beasts, and over men, from highest to the lowest.”

MIFTAH EL-QULUB *(Key of the Hearts),*
Persian MS. Of the 1000th Year of the Flight.
(Oriental Magic, Sayed Idries Shah, 1956)

LEVIATHAN

The mention of Leviathan is an allusion to the miracles connected with the Exodus of Israelites. The Exodus remains the symbol by which subsequent events are interpreted. The Interpreters Dictionary of the Bible suggests that “The Exodus from Egypt is the creative center of the O.T. In countless ways the literature of Israel reveals the magnetic power of this event far removed from it in time”. This magnetism makes it possible for all subjects to understand each other from one end of the world to the other without speaking. The human idea contains for us all the secrets of thought, and all the mysteries of the ancient world, the world created before man, the world in which no balance could be attained until the appearance of the form called man.



“The Coiled Serpent” Persia C. A.D. 600.
(Bowl painted with an Aramaic incantation and a figure of Leviathan)

Before the ancients revealed his grandeur, he let there come into being gigantic forces which reigned like kings in the land of Edom. Human nature was in a state of chaos, like the human mind when it lacks a productive generative force, the idea of God. It existed but it was not controlled; it was at work, but the law of its working was not fixed until it had produced its master and discovered. It breathed on the spark to cool it, and the spark grew firm. It expanded and hollowed itself out, like a blue, transparent skull enclosing thousands, myriads of worlds. And when this stone appears, a great tempest arises, the waves are lashed into fury, and the noise they make is heard by the immense serpent,

named leviathan. This stone comes from the deep abyss, it rolls in the boiling torment of the sea, out of which rises at last; and darkness covers all, a darkness next to which all other darknesses seem as nothing. The initiated know that in this darkness are hidden all the mysteries of knowledge. “His redness is that of fire, which destroys and renews life. His look of kindness is burnished yellow, shining like gold. When he grows wrathful, when he threatens, in the corners of his flashing eyes there hang two tears. His lightning bursts forth, his anger plunges to the depths of the abyss, fire breaks out, devouring its victims forever. The powerful of the earth are overthrown, cedars are twisted like blades of grass, the abyss is gratified, anger is appeased, the sombre God grows calm, and on the hanging tears a brilliant beam of light of a God of love.

A time would come when the earth would be sanctified, in the course of the seasons at the end of the harvest, after one has gathered the produce from the threshing floor and the wine press. The prophet speaks of a time when *the light of the moon will equal the light of the sun* then the defects which afflict mankind will reveal themselves.

The opinion that in our day and age the tricks of magic and sorcery have lost their power could be used to justify revealing the magic power (Leviathan) to the people. To further this goal go out there where distant worlds who did not receive news of the proclamation in time to know only serves to create in us a state of mind which will enable us to confess our sins, because the law does not deal with exceptional circumstances. Understanding in one’s heart precedes all repentance. It follows allegorically that freedom will reign over earth only when it becomes a driving force and has revealed itself. Consequently, in the meantime the forces of impurity rush forward in a torrent and invade all, and the building blocks of the physical world, raise up its ruins and rebuild it. God’s foreknowledge and mans free will

appear to exclude each other, even though those two principles can coexist in perfect harmony with each other.

(New Catholic Encyclopedia Vol. VIII, 1967)

Freud Writes About Moses

Sigmund Freud (1836-1939) wrote various works dealing with the subconscious and classifying psychotherapy. These descriptions of Freud's well known psychotherapy and investigative psychology cases are derived from ancient literature; Oedipus, Eros, Narcissus, all are evidence to his acquaintance with ancient Greek philosophy and poetry. It seems that Freud in his younger days had been under the influence of the century's optimism and religion. Therefore it appears that he was less shaken at the outbreak of the first world war in 1914, than most others in his generation. He was however repulsed by the political terror and brutality towards the Jewish people that occurred in the 1920's and 1930's. It is during this time that he returns to his heroes Akhnaton and Moses. The Swiss historian Ed. Meyer had published a book about Moses in 1906. The work claimed that Israel's new religion did not start in Egypt, and did not start at the foot of Mount Sinai, instead at a place called Meribat-Qades, an oasis full of wells and springs, on a stretch south from Palestine, between Sinai and Arabia. Freud's interest in this work inspired him to write about Moses. In 1938 Sigmund Freud fled to England where he lived thereafter in free Great Britain. One of the first things he did, was devote his attention to writing a book about Moses. Equipped with his psychological methods and rich knowledge of history, he fumbles through the dark without realizing enlightening results. First he asks in a question that has been posed for years "What took the Jewish people with them from Egypt?". Shaken by current problems that resemble old news and references to "Israel and lites", Freud attempts to uncover the mystery of Moses. In 1912 Freud wrote *'Totem and Tabu'* With the totem-animal it is difficult

to differentiate one from the other, without applying separate individual functions to a name. The city of Theben's god AMAN-RI, where RI is the sun-god. What happened to the New Nile Kingdom, at the city of Theben's? Where did Moses get his name from? Napolean Bonaparte came from an Italian district in France. Benjamin Disraeli was of Italian Jewish decent. In order to complete his study of Moses, Freud has to overcome the overwhelming powers and their influence on people and history. He finds it impossible to complete his book on Moses. "Such a continuation of my work would attach them to those earlier investigations, that I conducted 25 years ago, collected in *Totem and Tabu,* however; I no longer have the strength to continue to do this".

("*Der Mann Moses und die monothetheistische Religion*" Sigmund Freud Gesammelte Werke, Vol XVI London, 1950)

Khnum modelling man on his potters wheel

Moses Utilized Electrified Atmosphere and Clouds and Earth.

In Egypt during the eighteenth and nineteenth dynasties (1550-1200 B.C.) slaves were brought into Egypt in large numbers from many different people, and were dispersed throughout Egypt to serve in many capacities. Beneath the Pharaoh is arrayed the entire power of the Egyptian state marshaled in it, magicians and armies. Their powers is at stake in the contest. This is interpreted to mean that the entrance within a span of several hundred years of the understanding of electrical effects had reached a plateau. It underlies the occult arts of magicians of Egypt, and the

presumptious Pharaoh, who means to show that there is none like himself in all the earth.

Moses is equipped with extraordinary power which are intended, and radical reorientating event's win the Pharaoh's compliance with the divine order before his people. Having promised obedience to this will the people are bound to their covenant. A name by itself, however important to the events describe, does not make a historical personality. Moses is a prophetic mediator between the people and God. In some sense it is the mission of Moses that had not been fulfilled and hence demands a recasting of his work and witness in fresh garb. "Moses appears first of all to dominate the exodus traditions. The magnetic power of the man attracts attention from every strand of biblical material early, late, which sets its story in the exodus period". A method for investigating the historicity of Moses employs evaluating tradition in which he figures. It has long been recognized that the theme 'the revelation at Sinai' shows evidence of only a loose connection with the other themes. Egyptian influence of many sorts may have touched Moses. "What is certain is that Moses's awesome energy and power stem from another source". The link between Moses and electricity is such an intimate one in that it seems almost impossible to question its authority. There are those who would see in the Sinai covenant Moses' achievement in creating a unique politico – religious union centered upon commitments that point to the Hittite model of the late Bronze Age, that which emphasize absolute loyalty between king and vassal and between vassal states, the force. People walking around with their head in the clouds. Moses doubtless pursued the academic program of an Egyptian scribe, and received special and secret knowledge, and he was provided with signs of divine power. He would be able to turn his rod into a snake and back again. God sends Manna from heaven. His accomplishments appears at the end of the

Pentateuch “And there has not arisen a prophet since in Israel like Moses, whom God knew face to face, none like him for all the signs and the wonders which God sent him to do”

(The Interpreters Dictionary of the Bible. 1962 page 440-443)

The Ark Power Station

Mt. Carmel is a high cliff that shoots out over the Mediterranean During thunderstorms the atmosphere is electrically charged up to 5,000 volts/ meter. Masts that reach up into the air will be subject to ‘Saint Elm’s Fire’. The Phonecians worshipped a god named Baal which means ‘electrical fire spirit’ or a god named Moloch which means ‘the big fire god’. In order to make him immortal, Archilles was said to have been held in such an electrical fire, but unfortunately his heel by which he was held, was not affected by the fire and hence he still had one vulnerable point – his Archilles Heel.

Israelites technical innovation is known earlier from large sun powered metal apparatus used for the distillation of manna. Manna was collected six days a week while on the seventh they rested. Israel’s next well known electrical technician after Moses was king Salomon, whom the Arabians called ‘The Magicians King’, he succeeded in ‘locking up spirits in copper flasks’ and putting them to work for him. Salomon was engaged in building a temple utilizing an electric power station similar to the ones used in the pyramid, and utilizing concave mirrors and crystals as lasers. The queen Semiramis had a very mysterious temple built on the east side of a mountain near lake Van. There is reason to believe that she inherited the Shamir - a ruby laser – from her predecessor ‘The Magician’ Salomon.

Moses is the first electrical technician we know of among the Israelites. He must have learned of these techniques from his fellow countrymen. In the Sinai desert there existed a scientific-city in the vicinity of some mines which supplied Egypt with copper and gems. It was Israelites and Mittianites

that inhabited the city not only in the capacity of workers, but as electrical-technicians and metallurgists. It was here Moses took hold and his transportable electrical power station was constructed. The Ark of the Covenant was an electrical device termed the ‘throne of the God of Israel’. This device housed an accumulator-batteri and an rotating electrical generator. This power station could emit high energy electrical charges, which people learned, when they tried to prevent the ark from falling over during transport. The ark was a holy device that only trained and specialized personal could employ. The ark could be likened to a modern electrical power station.

Moses is to bring the people out of Egypt under a sign that points to the future. He stumbles unsuspectingly upon what proves to be the “Mountain of God”, what proves to be a holy place. “What turns him into a man of a concrete historical task and the new knowledge of God which grasps him?” “This galvanizes the extraordinary powers of the man in an endeavor which will hence forth dominate him utterly”. The spirit of Moses is transcribed to the scribes in unbroken succession. Moses thus becomes the teacher in a supreme sense. The presence of the spirit in the community creating a ministry in the spirit. “Beware not to agree on a covenant with the inhabitant in that country, that you come to, in order that it does not become a snare for you who lives in the middle of it”.

God spoke to Moses and said. “There is a cave in the mountains, where you may stand. I will cover you with my hand, until I have passed over, then I will withdraw my hand and you will be able to see my back. Then God descended in the sky, and Moses stood there and called his name, and God passed by him and Moses fell quickly to the ground and prayed”. Descending to the mountain from heaven, God appeared in fire and smoke, accompanied by the rumbling of thunder, earth tremors, and the blast of a very loud trumpet.

The Hebrews were frightened but Moses climbed to the top of shrouded desert peak and received the summary of ethical conduct known as the Ten Commandments. Later Moses returned to the mountain and received meticulous instructions for correctly building a tabernacle, including the sacred ark of the covenant. The structure was to be the symbol of Gods ongoing presence. He said “I will create a covenant before all your peoples eyes. I will do wonders, like none before have seen or done on earth, and all the people will see the work until that God wishes is done”. ‘The ark and the tent traditions’ finds an echo in the desert. In 2d Moses, 25. 10 describes exact instructions that God has given regarding the construct of the Ark. The measurements are given in centimeters, where various components should be placed, what metals shall be employed. God said to Moses that no one should approach the sacred ark of the covenant. An accurate description of the clothing, shoes, and transportation of the ark were given. (Exod. 2)

Moses usually pitched a tent some distance from the camp where he could talk to God. Every time Moses went out to this tent, all the people would rise and stand in the entrance to their tent and watch Moses, until he entered the tent. When all the people saw the cloud descend on Moses’s tent they all knelt and began praying at the entrance to their tents. When Moses entered the tent the clouds would descend and cover the entrance. Then God spoke with Moses face to face, like one man to another, a man to man talk. And then he returned to the camp leaving his helper Joshua, a young man, guarding the tent. In certain passages, it seems that the tabernacle was a tent, which was pitched outside the encampment. At other times the tent and the tabernacle are treated as separate structures.

“At night when the dew settled on the tents the moon also descended upon them.”

Outside the tent Moses makes a conductive cloud of smoke rise. By sending up this smoke he creates a connection that short circuits the sky, and returns a current to the ark. In this way he returns the current to the tabernacle through a wire. He describes many layers of carpets, and the use of copper in the seams of the tent covering (Moses 2, Chapter 36 Verse 18)

"It was these (electrified) clouds, that primarily were in charge of the people of Israel's wandering" (Moses 4, 9, 15).

"for throughout all their journey the cloud of God was upon the tabernacle by day, and fire was in it by night, in sight of all the house of Israel"

"That day the tent was raised, the clouds covered the tent, the witness tent, at night it was like a fire over the tent, and it stayed until morning.(Moses 4, Chap.8, verse 15)

(17). *"Every time the skies cleared from the tents, the Israelites broke up, and where the clouds settled in they pitched camp"...(18) "While the cloud coverage lasted they remained in camp...(19) "It was usual that the clouds only lasted a few days, then they broke camp and set up camp elsewhere according to Gods word"....*(21) *"It was usual that the clouds only lasted from night until morning. When the clouds lifted in the morning they broke camp. Or the clouds remained a day and a night, then they broke camp".* (22) *"Or the sky remained there a couple of days or a month longer, in that the clouds no longer hovered over the tents, then the Israelites remained in camp, but when the clouds lifted they broke up".* (23) *"On the word of God they pitched camp, and on Gods word they broke camp, they followed the orders that God had prescribed to Moses"* (Moses 4, 8, 17-29) .....*"On the 20th day in the second month of the*

second year the skies lifted from the tabernacle" ... "Then the Israelites broke up and the sky stood still in the desert." (Moses 4, 10)

"Then God ascended on the skies and spoke, and he took part of that spirit, that was over him, and let it settle on the oldest among the people, and when the spirit rested above them, they experienced a prophetic act, something they would not experience again...In the meantime two men remained in the camp the one named Eldad, and the other Medad, they had not gone out to the tent... and the spirit suddenly hovered over them, and they too had a prophetic experience in the camp. (Moses 4, 11 ,25).

An 18th century Dutch engraving of 'Ark of the Covenant'.
(note spear)

Joshua was successor to Moses as the leader of the Israelites. Joshua said ”Go forward; march around the city, and let the armed men pass on before the ark of the Lord”. Israelite troops, with the Ark of the Covenant in their midst, marching around the city walls of Jericho.

Joshua was unable to tunnel under or breach their walls, he had to strike at the weakest point. Where in modern warfare the enemy might be subjected to a preparatory “softening” by an artillery or missile barrage, Joshua “softened” them by psychological warfare, using a stratagem to lull the enemy into a false sense of security and then springing his surprise. On the first day Joshua had his men parade silently round the walls, and this confused the Jericho defen-ders and made them nervous. On the second day they continued in the same manner and kept them guessing. By the end of the third day they began to relax their vigilance. By the end of the fourth and fifth day they began to doubt the efforts of the Israelites. By the seventh, expecting the day to end the same, the men of Jericho were startled by the shouting and trumpeting and panicked when the Israelites suddenly broke ranks and rushed the wall. The defenses collapsed due to a passive mentality, and Joshua defeated Jericho.

The plague of hail and fire by John Martin

Philo’s treatise on the Confusion of Tongues and the Migration of Abraham.

Philo Judaeus of Alexandria identifies Moses and writes about the role of Moses task (‘Life of Moses’). The account of his birth parallels the legendary story of Akkad, who deposited in a basket boat and rescued, achieved great prominence. Shelter to the powerless infant who will one day reveal its extraordinary achievement and deliverance, and its Levite acestory.

The building of a tower to reach heaven, resembles the Homeric myth of Aloeidae, who according to Homer planned to pile the three loftiest mountains (Olympus, Ossa, Pelion) on each other in one heap, hoping that when they were raised to the height of the upper sky they would allow those who wished to ascend to climb to heaven, where an interpretation of heaven means ‘Mind’ and an attempt to exalt sense above mind, an absence of the illuminating influence of the mind. Secondly that the story of the confusion of tongues is similar to the fable that all living things originally understood each others language, and that the multiplication of language would serve to prevent sin. Moses ‘a man of war’ by ‘one lip and one voice’ working in a symphony, met the Pharaoh on the ’lip’ of the river. Israel would ‘do and hear’ God’s will even before they had heard the commandments. We now come to the building of the city and tower, “Come let us make brick and bake with fire” means shaping of the mind and thoughts, and the divine judgement “before we are scattered abroad”. When a single commanding voice bears down at the same moment upon

their lone victims, a single item is enough to upset and overthrow even the very stoutest, if it brings its force to bear upon him where the weakness of the body and the external world unite obedient. When the guards fall of the body, the mind falls, who keep it erect and lift it on high and give it a sense of pride, and brings its foes crashing to the ground. Again the guard of the soul are the powers of hearing and sight and smell and taste, and the whole company of senses provides strength of the body and mind. They serve as a fortress well-walled on a firm foundation, houses within can hinder the mind from following urges of its personality, with free passage everywhere on an open road. Working against these guards are hostile forces, which may violate the senses. One soul having parts assigned to the mind and reason, and one to the appetite, with mischief working in all of them, each in relation to the other. Desires which light as chance directs on things, like a ships crew, passengers, and steermen had conspired through some madness to sink it. The first to sink with the boat are those who planned its destruction. This cooperation of all the parts of the soul stands alone with the wild commotion eddied and swirled continually through the whole region of the soul which formed their meeting place. “All these joined their voices to come to the salt ravine; this is the salt of the sea”. Observe further those who were barren of wisdom and blind in the understanding which should naturally be sharp of sight, their qualities veiled under. Moses the prophet of God shall meet and stem the strong current of their boldness, they come wishing and their tide is the tide of a river. Behold he says, the king of Egypt comes to the water and Moses shall stand meeting him at the ‘lip’ of the river. The rushing flood of a strong current of emotions, iniquities, and passions, which Moses likens to a river. In his paradox - he meets – for “thou shall stand meeting” where meet involves the idea of motion and ‘stand’ calls up the thought of rest. The two things spoken are not in conflict but in a natural sequence

to each other. Forward then Senators let us carefully consider how we may succeed. The firm foundation for such a success will be to give form to the formless by assigning them definite shapes and figures and to distinguish them from each other. Moses describes the workmen taking two substances of earth and water, one solid the other liquid, and by mixing them has produced a third, called clay, which he divided up into portions and without interruption gives each of the sections its proper shape. He wishes this to make them firmed and secure, the completion of the building. This process is copied from nature, when we mix the unreasoning and impulse of passion with vices and then divide the mixture into its kinds, sense of sight, and hearing, and again into taste and smell and touch, passion and pleasure, and lust and fear and grief, the material which molded and shaped by their builders will form the fort which towers aloft to menace the soul. Now there are those who went to a further extreme, and not only worked up their own souls to do thus, and have violently forced others, their children, to make bricks and build strong cities. They wish to show that prudence and every virtue is subject to folly and vice and is obedient to every command of the despotic power. Behold, the eye whose name is Israel, imprisoned in the gross material nets of Egypt and submits to the betting of an iron tyranny, to work at brick and every earthy substance unremittingly. When the wisely-minded sees the tasks which many men endure cries aloud to God to provide a price for the souls salvation to redeem it into liberty. What then is liberty. It is the service of a wise being, “send forth the people that they may serve me” setting before them Moses. Then they shall behold the ‘Word’ the never changing where God stands and “what lies under his feet like the work of brick of sapphire, like the form of the firmament of heaven...even the world of our senses which he reveals in this mystery”. For those who have entered into comradeship with knowledge to desire to see the work of our senses, the

earnest desire to see things exactly the way they are. When our sight comes in contact with it, its movement is exceedingly swift, outstripping all particular movement. To our eyes the sun and the moon, by night and day, appear to stand still. Yet the rapidity of their transverse across the heavens is visibly only to the eye of the understanding. The mind called Moses, when he is imprisoned in the ‘ark of the body’ the ‘tar-pitch’ that may insulate all that is presented to the senses. He weeps for the mind of the multitude, erring, vanity-ridden, miserable – their minds that cling to false opinions. He calls upon the sight and the hearing and invokes every sense, without delay, each bringing all the instruments that are needed. It is not well that many lords should rule be there only one, one kind that will enable them to achieve with ease all that madness and savagery of theirs minds conceive. Moses says in the words that follow: “They ceased building the city and the tower (Gen. XI 8.) obviously not because they had finished it, but because they were prevented from completing it by the confusion that fell upon them”. The enterprise was planned and they were unable to escape the guilt which would attend its accomplishment. What is meant by confusion? Philo describes ‘mechanical mixtures’, ‘chemical mixtures’ and their means of separation and how a chemical mixture can be resolved into the different qualities out of which it was composed. With some compounds when formed it is impossible to separate the properties which went into it. If the interpretation that different languages then results in confusion, separation would be a more correct term. Things divided are not confused ‘they are separated’. Philo points out that seeing is higher than hearing, and believing points to the thought. Hearing in the ordinary sense is even less than the other senses capable of being connected with sight. God begins carrying out his will “I will make thee a great nation”. He begins by giving out a starting point for the salvation of the soul and removal of three localities, in

the sense perceptions, and speech. First ‘Land’ or ‘country’, ‘kindred’ and ‘fathers house’ of speech. Moses is a witness to this, sense perception is of one family of understanding and these are part of ones soul. ‘Father’s house’, because mind is our father, being in charge of the house. House because mind has speech for its house – or living room, secluded from the rest of the house. It is there that mind reveals in orderly form itself. Moses gives to speech the title of ‘Mind’s’ house in man. He employs this as his instrument, that the fabric of his handy-work might be without reproach. He urges man to escape from all that may cause them despair – to depart from the sense perception of thy kin. We find that when the mind begins to know itself it separates itself from the former. For being well qualified to train men and equipped to and capable of admonition and correctness, he contemplates the task of taking out all the population of the soul out of Egypt. When they do this God instructs his prophet regarding coming out, and his prophet delivers them, he says “I will be with thee”.

At this point Philo writes about himself. *“I feel no shame in recording my own experience, a thing I know from its having happened to me a thousand times. On some occasions, after making up my mind to follow the usual course of writing on philosophical tenets, and knowing definitely the substance of what I was to set down. I have found my understanding incapable of giving birth to a single idea, and have given it up without accomplishing anything, reviling my understanding for its self-conceit, and filled with amazement of the might of Him that is to Whom is due the opening and closing of the soul-wombs. On other occasions, I have approached my work empty and suddenly become full, the ideas falling in a shower from above and being sown invisibly, so that under the influence of the Divine possession I have been filled with corybantic frenzy and been unconscious of anything, place, persons present,*

myself, words spoken, lines written. For I obtained language, ideas an enjoyment of light, keenest vision, pellucid distinctiveness of objects, such as might be received through the eyes as the result of clearest shewing” The current coin of learning is brilliant beyond those gained by the ears, and insight the source and fountain-head of science and knowledge. It is not nature of voice to be visible whether we regard it as something audible. The properties of these two are invisible mind and speech. The truth is that what sound produces is not similar to the divine organ of voice, for ours mingles with air and is akin to the ears. The divine is pure and unalloyed speech, too subtle for the hearing to catch it, however visible to the soul, which is single in virtue of its keenness of sight. Some exceeding all bounds in the determination to kindle into activity all the erasures, errant points of view of the soul, and destroy the mind, wander a fools course through every moment of his journey depending on the controlling guide of the Divine word. Still, Moses, best beloved of God, the war-like spirit in its completeness, will exercise its truly free and noble impulses towards the beautiful, with nothing pulling against it any longer and dragging it in another direction. In these circumstances they will succeed. He says ‘And I will endow thee with excellent reason and speech, utterances being under the guide of the right training “And thou shall suggest to him the thoughts” for “thoughts” are nothing else than Gods ‘words’ or speech that carries forth the thoughts with it. Moses had not the readiness of speech, therefore the ‘interpreter of thought’ Aaron was called.. Further on he will also bear the name of the ‘prophet’, “I will make thy name great”. Aaron had called up frogs over the entire land of Egypt. Aaron’s rod swallowed up their rods. (This is likely what the Egyptians did in the famous battle between Moses and Aaron. The viper was put into a state of cataleptic rigidity, it then resembles a staff. When it was thrown to the ground, the shock rouses it, and breaks the hypnotic state.)

The Famous Battle between Moses and Aaron and the Egyptians.

The people when washing their hands and feet, which forms the base and support of the mind, may be helped to see themselves reflected by recollecting the mirrors out of which the laver was fashioned. For if they do this they will no overlook anything. Bells are symbols and qualities recognized by the senses and tested by the sight and hearing. He has weighed his words when he adds “His sound shall be audible when he is about to enter into the “Holy Place” [Ex. XXVIII 31] – Where the soul is about to enter the truly holy place which only the mind can apprehend. A composite being, all in time – various voices blending one with another – the thoughts of the mind inspiring the keynotes – where the leaders of the choir are the trills perceived by the mind alone – while the object of sense-perceptions, separating from the soul these things demanded by nature. The ‘clothing’ and all that belongs to the phenomenal world of human life. A persistent study directed to the world of sense and to find likeness of the invisible world of mind. To proceed then spinning out long speeches, day and night and wear out the ears with prophetic utterness, while the mind that looked upon what is stored up in the soul with loathing and condemnation.. “Abraham the Wise”, when he had made trial of Gods unvarying loving kindness, believed that, even if all else be done away, except some small relic of virtue he preserved as live coal to kindle with, for the sake of this little piece. He looks with piety on the rest too, this way raise up fallen things and to question dead things (Gen XVIII, 24ff). *“For a smoldering spark, even the very smallest, when it is blown up and made to blaze, lights a great pile, and so the least particle of virtue, when warmed into life by bright hopes, it has shone out, gives sight to eyes that erst were closed and*

blind, and causes withered things to bloom again, and recovers prolific fertility all that were barren by nature, and therefore without offspring. Even so scanty goodness by God's favor expands and becomes abundant, assimilating all else to itself (XXII). Let us prey then that, like a central pillar in a house may constantly remain for healing of our maladies the righteous mind in the soul and in the human race the righteous man; for while he is sound and well, there is no cause to despair of the prophet of complete salvation... The most potent example is Noah, riding upon the waves that buoyed him up. *He is not speaking of movement by the use of legs,... while the earth carries man, does the universe carry God.. he is employing a loftier figurative language to express the case that when the mind has reached the summit, it will render the sum of his tribute to go, the consummator in accordance with all holy writ. What is meant with by Lot went with him'. Let the mind be bent not only on keeping a straight course, let it not incline to either side, either to what is the right hand or on the left, tossed by winds, or weighing up and down as though on a pair of scales, incapable of stopping, make him slip in this direction or that.* Philo says what befell the mind when it escaped from Egypt, and the prophesy of Moses was "that followed us, checking our zeal to be gone, and moved by envy to retard the speed of our departure" to wear itself out for forty years wandering and going round circle wise obedient to the manifold element with its many twistings. The people among them craved after lust, and when it could not obtain what it was longing for, sat and wept. Then this last thing occurs which is sometimes the case, a sudden shower of unexpected good things falls, and they come all at once like a flood. "With joy the best of emotions she laughed with glad tears in her eyes". The emotions when squeezed and compressed it distills moist drops, which we are in the habit of calling "tears". Then the pharaoh of Egypt mounts the second chariot of the mind that fancies itself kind. The lover

of sound sense will, therefore, set a barrier between him and the man, who like a drone has set himself to make havoc of the useful labors of the bees, and follow them for the sake of doing this. A divine intimation was given to the wise man that come together in a place of which God told him. Abraham says of the men that journeyed with me, these shall receive manra; meaning “fire” for natural ability like fire is full of daring and hot, and clings to whatever it touches. In receiving the manre the eyes of the soul are opened by cheerfulness. The contemplative life is receiving the manre, which means seeing, and there is an intimate connection between seeing and contemplation. When Abraham was old and migrated from Chaldrea he went to Haran and had already quitted two places. The Chaldeans had the reputation of having in a degree quite beyond that of other people an expertise in the science of sky-lore. They set up a harmony between things on the earth and heavens furthest bounds. Applying laws of musical proportions they have exhibited the universe in a symphony produced by a sympathetic affinity between distances, separated in space, and common to each other, looking beyond things perceived and the senses that perceive them. The mind and the sense-perception mingled together to produce a single state, itself sovereign control of all that is in you, and brought every part into subjection to itself, in order that lordship all over guides and controls. “He has hidden himself among the baggage” deeming it necessary to quit also the country of sense-perception Haran. In the wilderness refuge to “look to the Manra” preferring the onions and fishes of Egypt. And the cloud which divided the host of Egypt from Israel, the work of Logos standing surely for the ultimate obedience of mankind. The great chandelier of the heaven for earth. They are the number of thoughts that beset the mind and drag it down. When the sun was setting a flame arose, and an “ecstasy” (trance) fell upon Abraham. Elevation of knowledge comes to a person when he is ready for it.

Ecstasy sends the mind to a depth where it is being repeated without conscious effort. The sweet and harmonious melody of the mind’s music can only be apprehended by the minds musician, and the sense of prolonged and continuous action. The spirit called Pharaoh who is impossible to escape. “A voice of God came to him“ it suggests a loud, sonorous continuous appeal, pitched so as to spread abroad throughout the soul, whereby no part shall be left to which its right instructor has not penetrated with sound learning. Like persons possessed and corybants, he was filled with inspired frenzy, the mind no longer in its own keeping but stirred to its depths and maddened by heavenly influence, where the object of sense has no true existence. The world is a cathedral of which mind discovers the invisible, the sense-perceived order. He led him outside and said “look up into the heavens”, only the man of worth who sees, and therefore called prophets or “seers”. (I Sam. IX9) Others have bent their eyes eastward. The one extends his vision to the ether and has been trained to look for the manre. Others see but the onion and garlic which give pain and trouble to the eyes, but now our soul has nothing to look to, save the manra. To go outside, to go inside or Moses when he goes into the ‘holy of hollies’ will not be a man until he comes out, apprehended by an intelligence which acknowledges no other authority than itself. Picture the soul of the sage a counterpart of heaven, that God directs, transcending the sky, a heaven on earth having within it the pure forms of being, movement, rhythmic, rays of virtue, stars which are visible and perceptible to the senses and the mind, like candles which can be lighted. They naturally acknowledge the activities and reflections of the mind, and receive the language and heritage that the miserable state deserves, a chaos, keen edging against truth, working harm to its victims and shame to its employers; ever inhibiting the objects of sense, and through its uncontrolled, incapable of satisfaction, regardless of its monitors, blind, deaf to all that

they do for its benefit of mind, to mental apprehension of speech, to activities of the voice, of the senses, to receive the pictures presented to it by objects, the movements and postures proper to it, the invisible seminal artifices the ‘Word’, whetted to an edge of utmost sharpness, never ceasing to divide. For when it has dealt with all sensible objects down to atoms and what we call “indivisibles” it devises the “plates of gold”, Moses says “into hairs” like immaterial lines, instruments of generation. The word “clear” to indicate light, for this reason he sets the heavy substances apart form the light, connecting the letter in a single phase by means of the conjunction “and”, stating the heavy in the unconnected form. The light elements air and fire being formed by an “and”, where speech is the compound formed by the scent maker’s art. Learn how the cloud entered into the mist, between the Hosts of Egypt and Israel. How passion-loving was forbidden by the cloud, which was a weapon of shelter and salvation to its friends. For on the minds of rich soil, that cloud sends in gentle showers the drop of wisdom, but on soul barren of knowledge pours a blizzard of vengeance and destruction. To God’s word Moses is chief messenger. Having taught us the lesson of equal division, he leads to the knowledge of opposites, by telling us that “He placed the sections facing opposite to each other” (Gen. XX. 10). Hot is opposite from cold, in the air cloudless to cloudy, calm to wind, left to right. In science there are vowel or non vocal sounds or consonants, high notes, low notes, straight or curved lines. It has been clearly shown long ago by Moses that opposites are formed from the same, to which they stand in relation to sections or divisions. Now “ecstasy” or “standing-out” fell upon Abraham (Gen. XX. 12). Sometimes it is a mad fury producing mental delusion due to some cause. Sometimes it is extreme amazement at an event which happens suddenly and unexpectantly. Sometimes it is the mind relaxing, if indeed the mind can ever be at rest, and the best form of all is the

divine possession or frenzy. Moses brings the game to the tester to decide whether it will stand the test for all the elements of self-mastery, food for thought, practice, inquiry, reading, listening, concentration, and the power to treat things indifferent, are moved by nature. Egypt has its “task-drivers” who urge the enjoyment of the passions. About sunset there fell upon him an ecstasy. To the reasoning facility, the sun is world, both are light-bringers, one sending the light which our senses perceive, the other rays through the medium of apprehension. When the noonday beams into the soul we are self-contained, not possessed. But when it comes time to its setting, natural ecstasy, madness, and divine possession fall upon us. When this light shines the mind is evicted at the arrival of the divine spirit and when that leaves the mind, returns to tenancy. Desire has a power of attraction and forces us to the pursuit of the thing desired. We a likened to the furnace which has no clear fire. The flickering of knowledge are smoldering within us, flickering sparks, to the end that the mind separating the material from immaterial in the attainment of wisdom. When a strong absorbing yearning has sunk into us, it urges us to the quest of the desired object, until it is within our grasp.

The Famous Battle between Moses and Aaron and the Egyptians.

The Etrusians Divine Science.

Cicero describes divination as things that are perceived by the senses. He asks, can any question of physics be solved by divination, for instance is there one world on earth, or are there many? What can be foreknown by means of science, reason, or experience. How can anything be foreseen that has no cause or distinguishing properties. Persons who want to learn to play on the harp or flute do not take lessons from a soothsayer, but from a musician, the same rules apply in other departments of learning. Is there, then, in such objects some quality that we can better perceive than with the senses alone. Is there any diviner anywhere, who, if blind, like Tiresias, could tell the difference between black and white. Could the deaf distinguish between different voice and tones? Therefore divination is not applicable where knowledge is gained through the senses. Divination teaches us how great is the power of the soul when it is divorced from the bodily senses, when stirred up to their own impulses and delivered, see things they cannot see when they are mingled with the body. Cicero employs the authority of Marius and writes; what would be more clearly of divine origin than the auspice which is described in your Marius? (1).

Behold, from out of the tree on rapid wing, The eagle that attends high-thundering Jove A serpent bore, whose fangs had wounded her: And as she flew her cruel talons pierced quite threw its flesh, The snake, tho nearly dead, kept darting here and there its spotted head: And as it writhed; she tore with bloody beak Its twisted folds At last, with sated wrath and grievous wounds avenged, she dropped her prey,

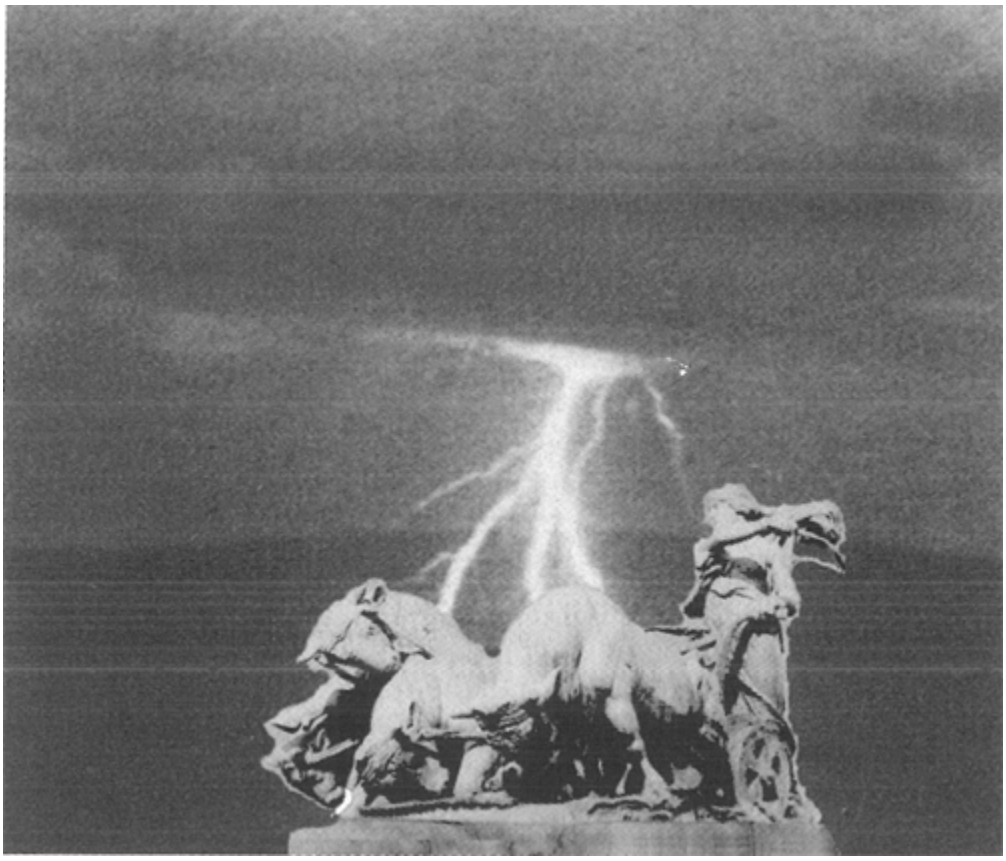
Which, dead and mangled, fell into the sea; And from the West she sought the shining East, When Marius, reader of divine decrees, observed the bird's auspices, gliding course, He recognized the goodly sign foretold, that he in glory would return to Rome: Then on the left, Jove's thunder pealed aloud, And thus declared the eagle's omen true.

"The Etrurians are very skillful in observing thunderbolts, in interpreting their meaning and that of every sign and portent. That is why, in the days of our forefathers, it was wisely decreed by the Senate, when its power was in full vigor, that, of the sons of our chief men, six should be handed over to each of the Etruscan tribes for the study of divination, in order that so important a profession should not on account of the poverty of its members, be withdrawn from the influence of religion, and be converted into a means of mercenary gain. The character of the country determined the kind of divination which its inhabitants adopted. For example the Egyptians and Babylonians, who live on a level surface of open plains, with no hills to obstruct a view of the sky, have devoted their attention to the stars.... On account of the density of the atmosphere signs from heaven were common among them, and furthermore since that atmospheric condition caused many phenomena both of earth and sky and also certain prodigies that occur in the conception of both men and.. for these reasons the Etruscans have become very proficient in the interpretation of portents. Indeed, the inherent force of these means of divination, as you like to observe, is clearly shown by the very words so aptly chosen by our ancestors to describe them. Because they 'make manifest'", 'portend' 'intimate', 'predict', they are called manifestations.." (2)

"According to your view, long-continued observation is employed in the case of lightnings, and reason and

conjecture are generally employed in the case of portents. But what is it that has been observed in the case of lightnings? The Etruscans divided the sky into sixteen parts. Of course it was easy enough for them to double the four parts into which we divide it and then double that total and tell from which one of those divisions a bolt of lightning had come. In the first place, what difference does its location make? And, in the second place what does it foretell? The Stoics account for the thunderbolt thus: 'When the cold exhalations from the earth begind to circulate they become winds; when these winds enter a cloud they begin to break up and scatter its thinnest portions; if they do this very rapidly and with great violence, thunder and lightning are thereby produced. Again, when clouds collide their heat is forcibly driven out and the thunderbolt is the result. Realizing then,, that these phenomena are due to natural causes, and happen without regularity and at no certain time, shall we look to them for signs of future events?" (3)

"Besides, you quote me as authority for the remarkable fact that, being presented to the Senate, the statue of Jupiter, which had been contracted for two years before, was being erected on the Capitol." "So clever of Jupiter to devise such means to warn of us of danger! 'The statue of the infant Romulus,' you observe,' was struck by a thunderbolt; hence danger was thereby predicted to the city which he founded.' How wise of Jupiter to use signs in conveying information to us! Again, you say, 'Jupiter's statue was being set up at the very time the conspiracy was being exposed.' You, of course, prefer to attribute this coincidence to a divine decree rather than to chance. The man to whom Cotta and Torquatus let the contract for the statue did not, I presume, delay the completion of his work either by lack of energy or from lack of funds, but his hand was stayed till the appointed hour by the immortal gods!" (3)



“After a review of his Army Gaius Flaminus had moved his camp and was marching towards Arretium to meet Hannibal, when his horse, for no apparent reason suddenly fell with him just in front of the statue of Jupiter. Although the soothsayer considered this a divine warning not to join battle, he did not regard it”. (4) Cicero writes,: “Let us go back to dreams,.. when Hannibal wished to carry off a golden column from Juno’s temple at Lacinium, but since he was in doubt whether it was solid or plated, he bored into it. Finding it solid he decided to take it away. But at night Juno came to him in a vision and warned him not to do so, threatening that if he did she would cause the loss of his good eye. That clever man did not neglect the warning, moreover out of the gold-fillings he ordered an image of a calf to be made and placed on top of the column.” (1)

“Again, how, when, and by whom, shall we say that the system was invented? The Etruscans, it is true, find the author of their system in the boy who was ploughed up out of the ground; but whom have we? Are we to say that it was invented by the Pisidians, Cilicians or Phrygians? It is your judgement, then, that those devoid of human learning are the authors of a divine science.”

Minneapolis Museum of Fine Arts

On Dreams A Means of Divination.

Chance has worked more miracles through all other agencies than through the agency of dreams. What is the nature of these intimations, or of this advance information sent out to apprise us of future events. What then is the

nature of an art which makes prophets, and wanders aimlessly about – now here – now there - and makes action and inaction of men depend upon these prophesies. In order to understand the principle directing those premonitory signs that come to us in dreams Cicero writes. How is it possible to have recorded the countless and ever changing mass of visions, or to observe and record the subsequent results, much in the same way the movements of the planets, and thereby to have discovered an orderly course of the stars, not thought of before? No picture of anything can be formed in the mind except as the result of the impingement of a 'phantom'. "When I think of the walls of Babylon – some 'phantom' of what I have in mind strikes upon my brains. Hence it is possible for us to know everything we wish to know, since there is nothing of which we cannot think. (20 p 525 Cicero). They could not have told that by conjecture without the use of divination. Is there a divine power which pervades the lives of men guided by an intelligent force, which is diffused throughout the universe, a natal influence that is exerted by some, subtle, imperceptible force which is due to the condition of the sky. A clearer syllogism states, "that which could not have happened never did happen; and that which could have happened is not portent; therefore in any view, there is no such thing as a portent... This is illustrated by the story of a clever response made by a certain diviner and interpreter of portents. A man referred him for interpretation as a portent the fact that a snake was seen at his house, coiled about a beam. That was not a portent,' said the diviner; 'It would have been if the beam had been wrapped around the snake'. By this answer he said plainly enough: 'Nothing that can happen is to be considered a portent." (441 20 Cicero) "therefore, explore the cause, if you can, of every strange thing that excites your astonishment. If you do not find the cause be assured, nevertheless, that nothing could have happened without a cause, and employ the principles of

natural philosophy to banish the fear which the novelty of the apparition may have occasioned. That such a practice did not prevail with the augurs of ancient times is proven by an old ruling of our college which says, ‘Any bird may make a *tripudium*’. There might be an auspice if the bird were free to show itself outside its cage. In that case it might be called ‘the interpreter and satellite of Jove’. Our ancestors would not undertake any military enterprise without consulting the auspices; but now, for many years, our wars have been conducted by pro-consuls and propractors, who do not have the right to take auspices. Therefore they have no *tripudium* and they cross rivers without first taking the auspices. His method is of a kind with the advice which we augurs give, that the draught-cattle be ordered to be unyoked so as to prevent *a iuge auspicium...* What else does a refusal to be warned by Jove accomplish except either to prevent an auspice from occurring, or, if it occurs, to prevent it from being seen?.”

(Cicero Vol 20 p. 339 - De Divinatione, I p 107)
(Cicero Vol 20 p. 323 - De Divinatione, I p 93)
(Cicero Vol 20 p. 417 - De Divinatione, II p 47)
(Cicero Vol 20 p. 307 - De Divinatione, I p 77)

The City of God

Saint Augustine writes about the philosophical influence ascribed to the position of the stars at the time that twins are conceived and born. Thus the physical thought might be due to a similar physical constitution. When asked about the question of twins one author derived his name ‘Potter’.

“He whirled a potters wheel with all the force he could, and while it was turning he quickly touched it twice with black ink, supposedly in one place. Then, when the motion stopped, the marks he had made were found to be some distance apart on the edge of the wheel. “Thus”, he says, “given the velocity of the heavenly sphere, even if the second twin were born as quickly after the first as I made my second mark when I touched the wheel, in the broad expanse of heaven it makes a very great difference. Hence arise all the differences that are reported to occur in the character and fortunes of twins.“

The product of his fiction is more fragile than the fictile vases that are fashioned on that rotating wheel. “How do they dare deliver to others who are not twins statements that depend on a secret that no one can comprehend and set down from the moment of birth”. Who would consult them when to sit down, when to go for a walk, when to eat, or any of the many great different characters and activities that confront men? Their heart of clay may be set spinning.

They call it Jupiter who in their belief is the supreme god whose power reaches out with invincible might though the universe. From him comes measure, number, and weight. The Romans master of all things and protectors of the sky, they trace it with a compass. Theodosins had been

consecrated by some kind of ritual to accomplish defeat and had been sent up in the Alps. When his couriers after enjoying the license of victory were jesting about the golden thunderbolts and golden statues, saying that they would like to be struck by such bolts, Theodosins presented these bolts to them with jovial condescension. When his enemies were defeated, not by his command, with the fury of war, their children took refuge in a church, although they were not Christians. Taking advantage of this opportunity, he asked them to become Christians. He treated them with Christian charity and did not confiscate their property, allowing no one to suffer because of their personal enmities. Instead of wishing the end of war, he rather regretted that the war had started. Meanwhile he ordered that pagan statues be overthrown and replaced with the power of the true God.

Just as the painter exists before the picture, and the sculpture before the statues, so the city-states precede the institutions that are set up by them. The poets have fashioned respectable characters for their gods, characters that do not exist. They have a bearded Jupiter and a beardless Mercury. The very brilliant men who dealt with the subject were well aware that the subject ought to have been condemned, however they dared not condemn the latter, though they did condemn the former. An actor on stage plays rather to amuse the people than to deceive them. There are hairdressers for Juno who, while standing a distance away from the temple and the image, they move the fingers as if they were dressing the hair, and there are others who hold a mirror. There are women who sit in the Capital in Rome, who imagine that Jupiter is their lover. They have no fear even of Juno’s look.

In the silversmiths quarters where a vessel passes through many hands of many artisans before it comes out finished, though it could have been finished by a single artisan. The idea was that different men learn different parts of the job

vocation quickly and easily, in order that they not be compelled to gain mastery of the entire art, slowly and with difficulty. People seem to laugh at this, however it makes sense though. The ancients designed the images and attributes of things in order that when men considered these visible things, they might gain mental insight into the world and how it is made up. For example a wine-jar was placed in the temple, placed there to denote wine, the container standing for the container.

Between the clouds and winds are aerial souls, received by mind, not by the eyes. Similarly every act must have a beginning and an end. For one to act one must pay attention to both, and during each move not look back to the beginning, nor look forward to the end. Hence it is necessary for the invention that foresees to be linked with the memory that looks back. For one who forgets what he has begun will not find the means to finish it. The joy is greater when the task is finished. During the course of a project one is fraught with worry until the end. When a man begins anything it is primarily the end that he waits for. Nor does he start a task, without completing it.

The mouth when open, may be similar to the universe, and the Latin poets have called the sky a palette. The world consists of four quarters. If the expression ‘Orient’ is used to denote the whole world, then we have two quarters with the name ‘north’ and ‘south’ and four doors, open and entry. And through all these doors no one escapes from the show except on that hears the truth saying “I am the door”. Jupiter is god they say, who has control of the causes for anything that happens.

The first thing is to distinguish between the beginning of a process, that which causes is always prior to that which caused. Not only is nothing effected, but nothing starts without an effect, unless it is preceded by an efficient cause. Power over beginnings and power over causes is another

concept, for all the things that account for various functions are extremely numerous. They all have names that apply to the function and their fundamental cause, for which they stand, stabilizing, and of laying flat sustaining the world like a beam. All things that are owned by men have value, riches are one thing and money is another. Likewise those who lack money are poor, those who are rich are wise.

The vital force which diffuses through all things is put in charge of human activities, as helpers in speaking. Received from it the faculty of speech, speech flies through the air like a bird. Speech itself may be called ‘Mercury’, because his name means middle courier (medius currens), because speech runs like a courier between men, and interpretation which belongs to speech runs with it like a seller of a buyer.

There are things that we know, the heaven and world exists, and we believe that the world is ruled and controlled by some invisible overruling power. Secondary causes of things are separated into their parts Desires are identical to the name they attach to stars. There is the brightest star which they call Venus, which has a rival in Jupiter for the brightest of heavenly bodies. Both of them shoot their rays of arrows from heaven all the way to earth. The gentler fire of the world which is suited for human use, while the more violent fire belongs to the Vulcan. They have searched to the boundary of the universe with no avail, and not even found a star, while the impulse of their belief drives them back and forth, to and fro, from the pressure of their weight and traditions. He was given a piece of earth and when grains were first planted, they were buried by human hands. As far as we know nothing in the sky springs from seeds, though some are carried by the wind, like a wave that comes to shores and goes back out to the open sea.

It is required that in the city in public places a hat should be worn on its matron, and if there was a matron in the audience they should remove theirs.

On earth there is no land so remote, or exceedingly wild that it may not be subdued or cultivated. The earth permeates even the lowest part of his body and imparts to it a divine force. This force in our bodies spreads to the bones, nails, and hair. And to the soul, that which has sensation, a power that extends to the eyes, and ears, and sense of touch, and that we call mind. There the intelligence is dominant, and what we perceive, are with our senses. It is the force extending to the stars and reaching the earth, while flowing further into the sea. If the bones and nails belonging to man having intelligence, they must have sensation. And if one wished to lift his head for a moment into freedom of natural thought, and then return to the book, here the point would be made. This fourfold power might have justified manifold powers belonging to a single source. A tower on earth in a fortified town, while all things move about. The sound of cymbals, signifying the iron tools in men’s hands. The cymbals are bronze because the ancients used bronze to till the earth, before the use of iron was invented.

We see then that some things then become better known than the rest, while men try to turn these human things into divine. The sky is that which acts, while the earth is passive, hence we describe a male power to one and a female to the latter. Plato says that his ideas have a power so great that even the heavens were made after their pattern; it was not the sky that made anything patterned on ideas. To the human intellect God created, he granted the knowledge he fills heaven and earth with, a power that is present everywhere and with a nature that is different in nothing.

These mysteries were with us from the beginning, though certain signs and cymbals suited to the times and to those who were to know it. Then the Hebrew people were herded into a single nation to carry on the mystery. To them it was

foretold and since they have spread the witness of their scriptures.

The plough turned up from the ground book’s of the king in which explanations were written down for reasons. They were brought to the Senate. The Senate having read them with due respect to religion ordered them burned. Pompetius himself had penetrated these secrets and had himself written them down, in order to refresh his memory. They thought it now a necessity to maintain those traditions, to continue their error without knowing cause, rather than by learning the cause bring turmoil in the state, rather than recognize the true religion by whose means they are exposed and vanquished.

The Egyptian magician Hermes (Trismegistus) says that by some strange technique man ”is making gods” and this great and miraculous power has been given to men. “For arousing greater wonder than all other marvels is the fact that man has been able to discover and manufacture this the divine nature”. There is no need to take a roundabout route in order to determine the relevance of this divine spirit. ”And it is not only in Egypt, that this change has taken place, but in all the earth, which sings to the lord a new song”. Through the influence of this detectable art, divine power he is driven to reveal the errors committed in the past, while a diabolical influence makes him bewait the future.

On a mountain near the shore of crocodiles, a temple was built for the first inventor of medicine in Egypt. There are many such places where men are tormented and made to confess. They are shackled by fear of a more powerful spirit than their own free will, all produced by an art that wickedly meddles with the occult and being delusive and dangerous, while another serves to purify, clearly a science capable of good and evil. “Their hearts are stirred by impulses resembling men’s and their minds are rocked upon the surge

or a restless imagination, and they are tossed about on a surge that affects the mind itself". Willing to instruct a man really fired up with a desire for knowledge, the philosopher brought out his little bag, with a work that contained thoughts of the founder of the Stoic School When the book was read it revealed that the Stoics believed in mental visions which they call fantasies and no one can prevent their impact on the mind. When these sensations arise, the mind of even the wise man must be disturbed, for he becomes pale with fear, or depressed by gloom, in that the proper activity of mind and reason are inhibited. Both the Stoics and other philosophers about the mind, both defend man's intellect and reason against enslavement.

Virgil says: *"His mind remains unshaken; in vain flow forth the fears".*

Even when wise men have removed themselves from the body by a power act of mind the knowledge of other gods hardly reaches them, and when it does, it darts at lightning speed like a flash of white light through the deepest darkness. It draws near to the minds of wise men with a intelligible and ineffable presence "If indeed these lights fulfils the earth's need for illumination reveal their function, otherwise by being seen neither by the look of men's eyes, however near they may be, when they behold them". Or may the sound of the human voice falter, even though not in contact of the human eye, the reasons kept in their intermediate position. About the remaining senses, the sense of smell the sense of taste, where the sense of touch is involved limit their mingling to seeing and being seen, to hearing and being heard. In the second place if they went that far in their mingling they cannot touch the sparrow unless it is caught. Then a mediator is needed. Well where is the ship and when does it sail, and how do we escape? A mediator arrives and is linked to us in the spirit where it

dwells in the highest region of the spiritual sense. This elevation of spirit is arranged like a ladder, and enjoys the advantage of escaping spatially. The Apostle says “knowledge puffs up, love builds up”. Sometimes they announce in advance events that they intend themselves to bring about in order to introduce them to the changes and workings of the conscience that must experience. The time has come when slaves must be submissive to their masters.

“There was an ancient city which was held by Tyrian settlers”

Virgil calls them “colony”, because they were the inhabitants. Philosophers saw and have written abundant stories with eloquence from the same source that we ourselves do, that from a certain intelligible light cast upon them, which is God to them, illuminates them in order that they may be enlightened, and blessed. This city “The city of God” has two divisions, one is us, and the other those lending their help. It is from that city on high that the holy Scripture came down to us and laid down the law. And again, great miracles were accomplished in Egypt through the agency of Moses, and amazing exercises of divine power. Though the answers from within the ark certain signs intelligible to human senses were vouchsafed from enclosed spans of the ark noised from within. Moses appointed some among men to take charge of writing.

Now, the people, senate, magistrate, or dignitary of the infidel city held innumerable conflicting views and would see to it that some were approved and others condemned or rejected. It is therefore for good reason that the city was named “Babylon” for Babylon means “confusion”. Those who were of one mind and knew no dissent were authors of sacred books.

After the captivity of Babylon the Jewish people had no prophets and slowly deteriorated. Through the New

Testament a temple was built more glorious than the one built by king Solomon. Here then the people were afflicted with so many disasters and by the Roman's themselves. Not long afterwards it was subjugated by Alexander, and from that time became tributaries of the Romans up to the time of Christ.

Prior to the term "philosopher" which was not yet in use to wit, "The Seven Wise Men" were the source of wisdom, after them Thales, the example, and from then on was followed in making the investigation of nature their chief concern. The era when a spring of prophecy burst forth from the spring of Israel and in those writings that were to irrigate the whole world.

Saint Augustine confesses that the Holy Spirit revealed matters sometimes written by men, and sometimes as prophets by divine inspiration, one credited to themselves, the other divine spirit. Thus one kind contributing to knowledge, and the other field strict guard kept over the testimony of canonical books. The scriptures of the Old Testament were translated from Hebrew into Greek. Philadelphus begged Eleazar to send him a copy of the scriptures. He requested interpreters and 70 men were selected from six out of 12 tribes, the most learned in both languages Hebrew and Greek. It was reported that there was a great sign of divinity among the translators that resulted in one translation, for there was only one spirit in them. The purpose of receiving such wonderful scriptures was to make the authority of the scripture divine and welcome beyond doubt. The same spirit that was declared by divine oracles in tones of thunder through the prophets when they delivered those messages was present in the seventy men, and therefore could say things in a different way, and could omit and add something guiding the intellect of the translators. "As long as churches are made up of those who are to be sorted out as if by a winnowing fan on a threshing floor, the

glory of the house does not appear so great as it will be when everyone who is there will be there forever”. ...”For he comes as a refiner’s fire and fullers herb, and he shall sit, refining and purifying as it were silver and gold, and he shall purify the son of Levi, and shall pour them forth like gold and silver”.. ’’purged by a threshing-floor by the wind of the winnowing”.

Aristotle speaks about the understanding of friction, moving in a parallel position relative to the ground, the center still remaining fixed, while the potter’s wheel revolves. All such movement is fast because the contact with the ground is slight, as a circle has only one point of contact, and because of the absence of friction. Now every circle is greater than some smaller one, for there are an infinite number of smaller circles.

A Light Revealed A Coil Concealed

Nothing is put into a building before the foundation. Many notable marvel that which they called mechanical devices contrived by human skills, with the use of something found in nature, one more light to reveal, one more coil to conceal. St. Augustine mentions that the magnet communicates its own power to iron. A magnet may be likened to the soul, knit to such a body, with such a bond, that the bond can’t be broken or loosened by the lapse of time. A magnet placed below a plate of silver affects only the iron. When a diamond is put near it does not attract iron. The diamond is imported from the east where they are experts in its use. We marvel that there is in charcoal such brittleness that it is broken by the lightest touch.

“There was a certain shrine of Venus with a lampstand and a large lamp on it burning under open sky in such a way that no great wind or rain storm could extinguish it, like the mineral the Greeks call “the unquenchable lamp”. This is a

fibrous incombustible mineral that the Greeks used in insulation. So in that lamp, human skill may have contrived a mechanism to use this mineral in the lamp. A magic art by a few such men their disciples, and these teach the multitudes. They are especially successful in gaining the hearts of men when transformed into angels of light". (Fibrous Serpentine, actinolite, blue riebeckite, crosidolite)

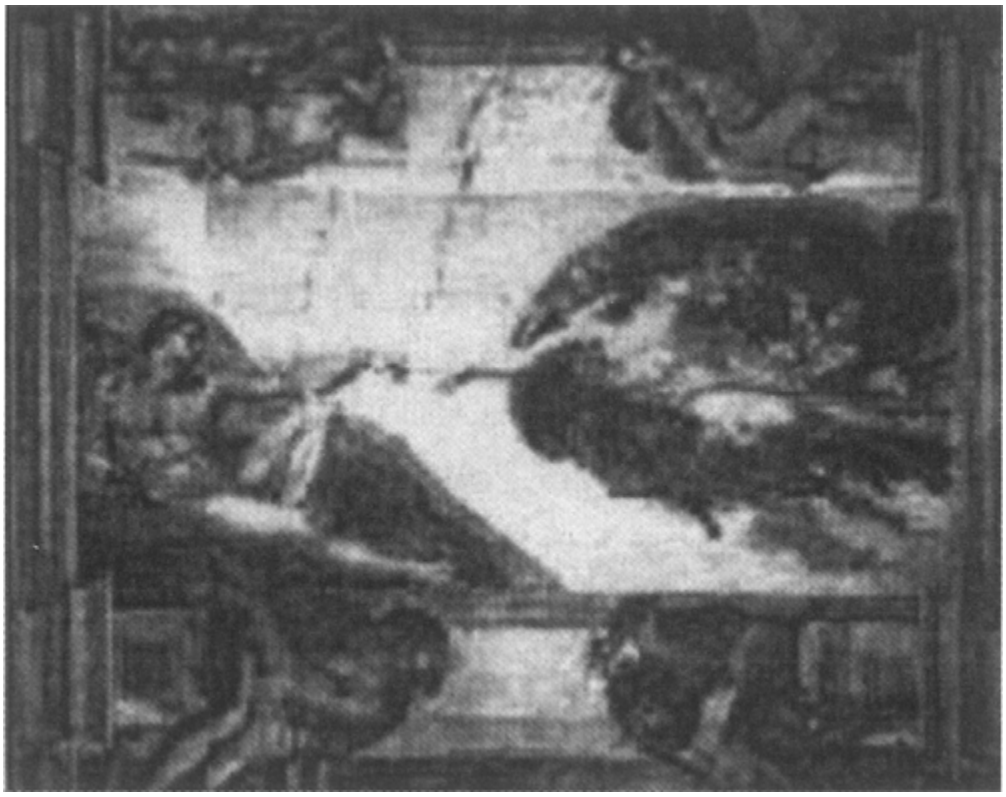
There are certain temples where magnets were placed in the floor and in the vault above, and an iron image was caused to remain suspended in mid-air between the two magnets. "And to those who are uncertain, of what is above and below it would seem a miracle. Something like this may have been brought to pass in that 'unquenchable lamp of Venus'".

What man knows a man's thoughts except the spirit that is within him, craving for elevation to forsake the ground in which they ought to be rooted, drawing in expelling the breath and uttering or modulating a sound; just like bellows serve the will of the blacksmith, or anyone who speaks, shouts, or sings. The poet expressed the sense of mankind that such charms free the hearts in some, and in others implant heavy cares, to stop waters, turn back the stars, rouses ghosts at night, makes the earth move beneath your feet, more powerful than all things on earth. There is a symbolism in this that points to a mighty mystery. A sort of shadow and image, for that which is fore-shadowed and preferred by its shadow, sketching the history of the other city, ran its course not in full light but in shadow. The proliferation of fine-spun and hair-splitting verbosity of the philosopher, one more tigers stripe to paint. God shall come from 'Teman the holy one' on the shaded mountain, from the land with many shaded mountains, and sayings that tax the mind of him who searches them. The mountains were ground fine, by powers of his miracles, the everlasting hill melted away. The tents trembled with fear, and the people with

sudden terror at report of your marvelous deed, images shall come to thee from the furthest ends of the earth.

The keener the sight of one who looks at them, the more stars he sees, and some stars may be hidden even to the keenest eyes. The world being global or rounded in shape, or if some process of reason should prove this to be the case, it would not necessarily follow that the land on the other side is covered by water. They overlook the hundred of years that it took to build the ark. Moses a man instructed in all wisdom of the Egyptians who were devoted to geometry. It follows that if stones can be cemented together to form a circular wall many miles long, is it possible that wood cannot be joined by peg, nails to build an ark which would extend not in curving but straight lines throughout its length and breath, not launched into the sea, raised thanks to the difference in gravity, and the arrival of floods, piloted by divine providence rather than by human prudence to avoid shipwreck anywhere.

(City of God, St. Augustine, IV page 575, Books XV, The Loeb Classicals)



“The Creation of Adam” Michelangelo

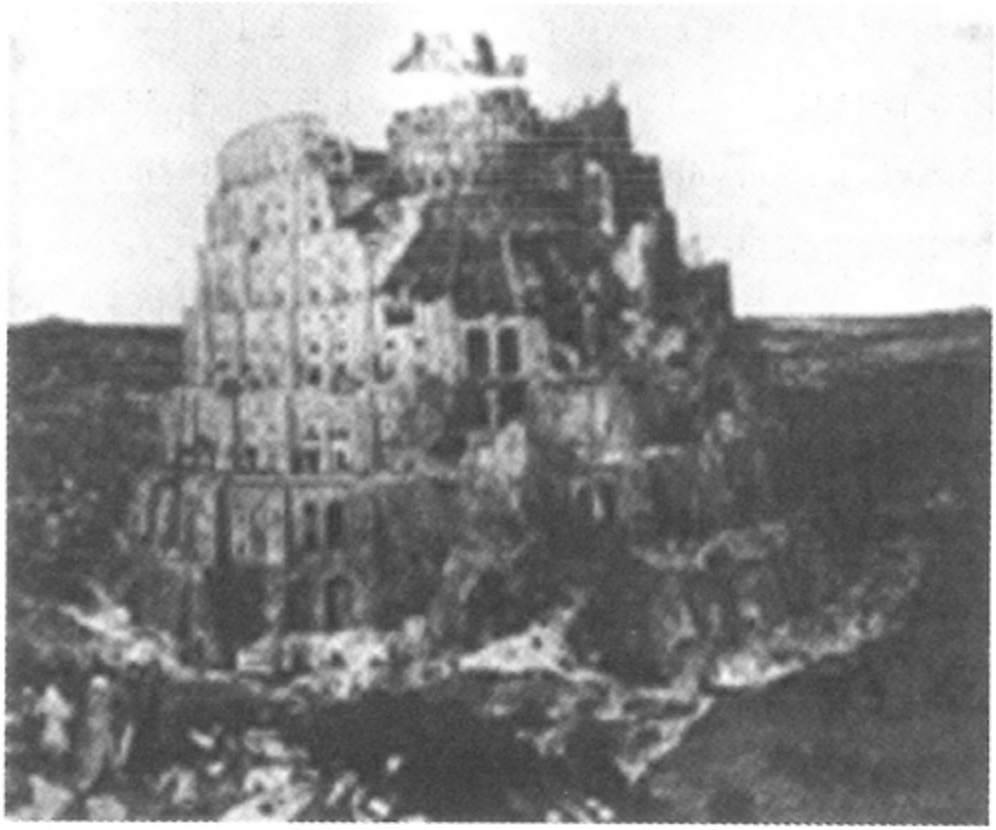
The Tower of Babylon.

Long before men thought of conquering the mountains, the mountains conquered them. Every high mountain was idolized by the people who lived in its shadow. In the west the Greeks had mount Olympus rising a sudden 9,000 feet above the Aegean. Only between the clouds could mortals glimpse an amphitheater of boulders where the gods presided in council. On the heights of Mt. Sinai the God of the Jews gave Moses the tablets of the Law.

And on the third day in the morning, there was thunder and lightning and a dark cloud upon the mountain and a very loud trumpet blast, and all the people who were in the camp trembled. And Moses brought the people out of the camp to meet God and they assembled at the foot of the mountain. And Mount Sinai was all smoke because the Lord descended upon it in fire, and smoke of it went up like the smoke of a kiln. And all the people trembled greatly. And as the trumpet blast grew louder and louder. Moses spoke and the Lord answered him in thunder. And Yahweh came down upon Mount Sinai to the top of the mountain. And Yahweh called Moses to the top of the mountain and Moses went up. (Exodus 19:16-20)

Where there was no mountains, people would build artificial mountains. The vast pyramidal pile in Babylon, 295 feet square and 295 feet high, became notorious as the Tower of Babel. In 460 B.C. Herodotus described the tower of Babel. A pile of solid towers, each smaller than the one on which it rested. In the topmost tower there is a great temple, and no idol stands there, and no one spends the night there. Egyptians reported the tradition that the ziggurat “had been

built by giants who wished to climb up to heaven. For this impious folly some were struck by thunderbolts, others at Gods's command, were afterwards unable to recognize each other, all the rest were hurled headlong into the island of Crete. A stairway from which the God could descend to the city, and on which people could ascend to make their requests. The soul, a burning breath, naturally rising through the air towards the fire of the sky. Each soul was a globe of fire endowed with intelligence, and all souls came together like a perpetual chorus around the mountain. The Tower of Babel became a symbol of man's effort to reach the heavens. The tower was said to be the earthly shape of a ladder, and the top of it reached to heaven; and behold The angels of God ascending and descending on it. All across Mesopotamia people felt the need for an artificial mountain to reach up to the gods. In the Nile Valley in lower Egypt we can still see some of the most durable artificial mountains. The earliest pyramids in lower Egypt were stepped-pyramids. The later pyramids showed no steps, instead they took on the smooth pyramidal slope, the sacred sign of the sun-god. The God-King Pepi, the ancient Egyptians explained, "had put down the radiance, a stairway under his feet..... a stairway to the sky, laid for him". In other parts of the world pyramids were rising, symbols of the awe of the mountains. The most gigantic monument in the world in Cambodia. On the flat peninsula of Yacatan, the Mayans set up their pyramid-temples at Uxmal and Chichen Itza.



The Tower of Babel

The Temple of Dendera

If we consider a society controlled by an intelligent elite, an elite in possession of a very high level of technical knowledge, a know how they use daily, that the society is not aware exists. This intelligent elite is already thinking 2000 years ahead of the rest of us. The people are users of the goods that are produced, that are procured for them, and they are not actively partcipating in the process of technical advancement. This intellectual elite starts then by communicating this knowledge and representing it in various ways to the future, possibly inscribed in a special building built for that purpose. One such building, that seems to fit this description, is found in Egypt. About 45 Km. north of the ancient city Theben just across from Kemieh lies one of the best preserved temples, the Dendera Temple, named after the nearby city. The Dendera Temple is likely the oldest temple in Egypt. The Temple above the ground is dated from 100 B.C., the foundation and 3 underground stories are likely 4700 years old. The entire temple seems to represent the advancement of knowledge, built to further this advancement to the future. It is not Pharaohs, rulers of ancient Egypt that are represented, instead an exact description of an electrical process where the single detail is described. Similar illustrations are rarely seen elsewhere in Egypt. Possibly an explanation to something one has heard or seen, or something one is thinking or planning, almost every inch of the temple is inscribed or illustrated and nothing is left to the imagination. The Dendera Temple likely functioned as a laboratory and university, where instructions were conducted in telegraphy, electricity, alchemy and other disciplines. Hieroglyphics depict hazardous high-voltage electrical exposure, electrical circuits, and electrical

lights, and secret ceremonies. There is a hieroglyphic depicting dry batteries with wires connecting them and a type of condenser.

The temple is connected with Ptolemaios dynasty which is the name of 14 Egyptian kings of Greek origin, that replaced another dynasty that stems from Alexander who conquered Egypt in 300 B.C.. Strabo wrote about the hostility of the Dendera people towards the crocodile. At Tentyra (Dendera) the people tracked and destroyed the crocodile in every possible way. He reported that they even went so far as to attack a crocodile displayed in Rome. The first modern description of the temple is found in the French Auguste Mariette, the curator of the museum in Cairo in 1869. He depicted most of the hieroglyphics in the Dendera Temple in fine drawings and published them in 5 volumes in 1869. At the time very little was known of electrical processes and therefore he was unable to draw any conclusion to the likeness of the pictures. Edison's had yet not invented the light bulb which appeared first in 1871. Later Emile Chassinal has published 5 volumes of photographs of the Dendera temple for the Institute Francais d'Archeologi Orientale. A similar temple is said to have resided in a mountain that since has been flooded when a damn was built in 1967. In the passages in the temple was discovered 30 meter cables and lights. The temple is likely under the waters of lake Nasser.

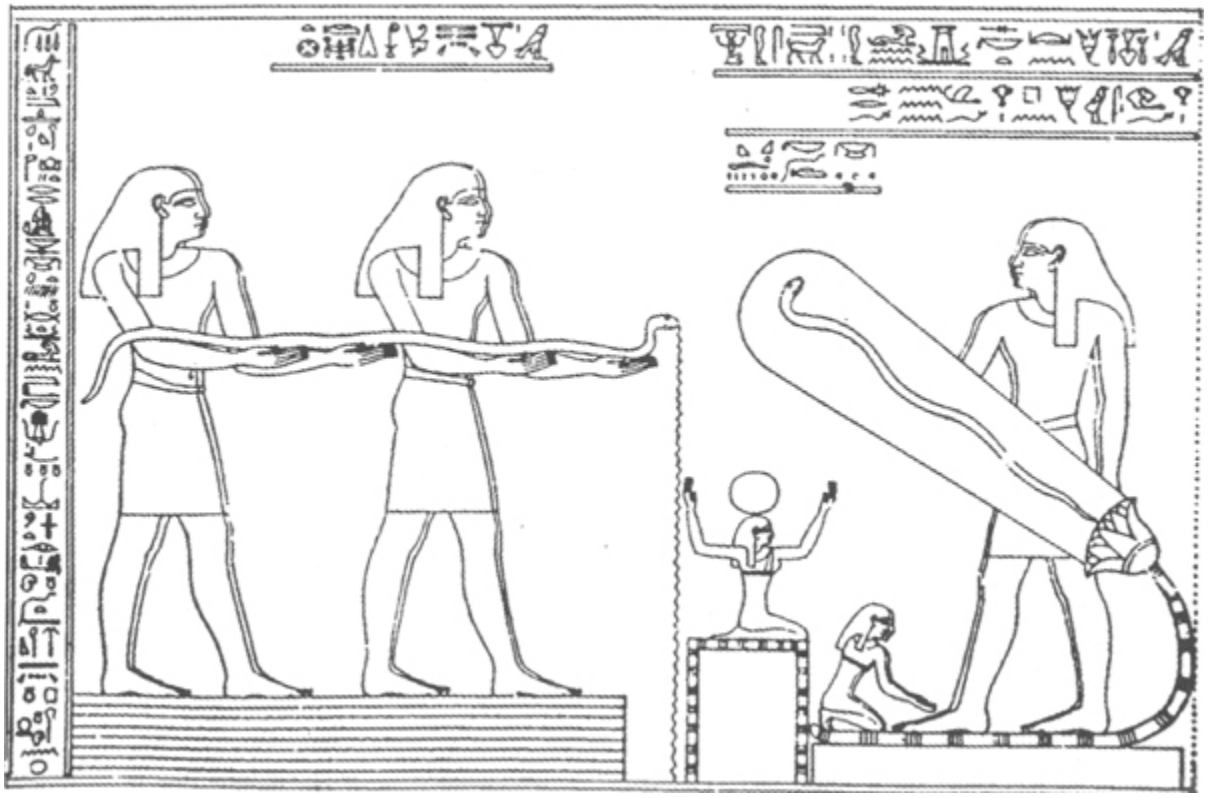
Archeologists acknowledge that certain ancient cultures have known and used electricity for various purposes. Batteries dating back to to ancient times in Babylon have been found that have been used by Persian goldsmiths and artisans for the electroplating of jewelry. An Egyptian manuscript called the 'Leyden-papyrus' exists containing a description of electrical techniques. Egyptian knowledge of using electricity was very advanced and it is only in recent times it has been revealed. There existed a Egyptian

Goddess of Electricity ‘Ausat (=Isis). At night Ausat was the Goddess because her batteries powered gods at night when the sun didn’t shine. After the Romans invaded Egypt the worship of Iris continued in Rome, where it survived until Christianity became the religion of the state. The classical writers Plutarch and Cicero, and later Augustinus and Clemens of Alexandria reveal important information about the Egyptians use of electricity. From Cicero the El in Eleusis is connected with the God of static charges in the atmosphere (feks. St. Elms Fire). Cicero’s mention of various genius are connected with the Arabian Djinn and spirits from lamps..

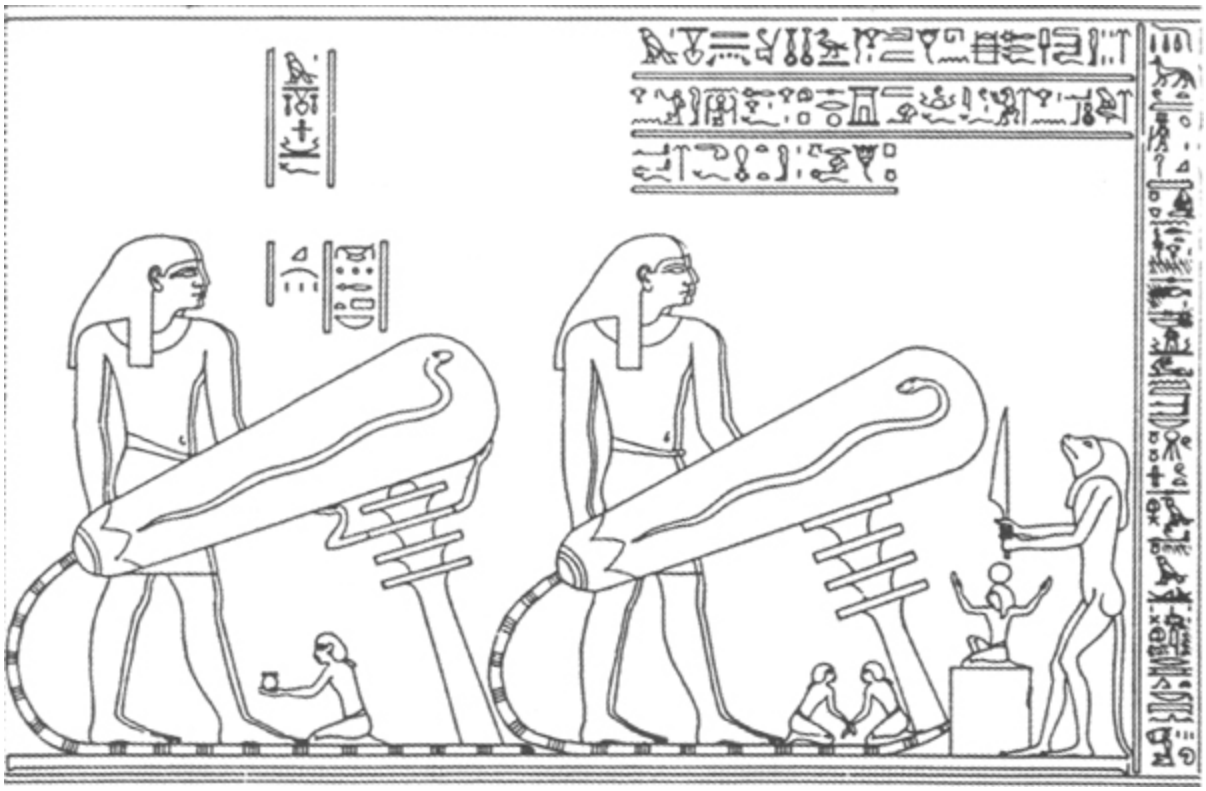
Light In The Temple of Dendera

The hieroglyphics in the temple shows a figure and a previously unknown type of crystal lamp, using a snake or electric eel to depict the symbol for electricity. It is shown in various reliefs, that the lamps can be powered either by batteries or rotating electrical generators, and ultimately in combination with these two sources of electricity. The people in the figures, male and female, seem to symbolize what we today call active or passive components. In the case where the rotating generator or the battery alone power the lamp, only the figure of a man appears in the relief, whereas when the two components work together, we see the figures of two men holding hands. In the case where the passive element (Lotus connection that normally is the source of current in the lamp). Is interrupted because the snake element in the lamp is connected directly to the rotating generator, we see the female component with her back turned. On the whole these figures are most likely a description of the use and maintenance of these lamps. In one of the relief we see that the snake-lamp is ‘burned out’, and technicians arrive with a replacement. The reliefs show the technicians drawn using double lines which has been interpreted to depict protective

uniforms. The use of electricity in ancient times is not limited to any local area, but a phenomena that has been known among sun-worshippers the world over. Many of the doubts we have will be overcome if we think of ancient man as being just as intelligent as we are today. Between the outer layers on the great pyramid has been discovered the remains of Iron plates. These must have had a special purpose perhaps photoelectic. In the other pymamid's a large system of a copper basin with lead stoppers and a 300 meter cooling pipe existed, that connected the pyramid temple to the Nile.



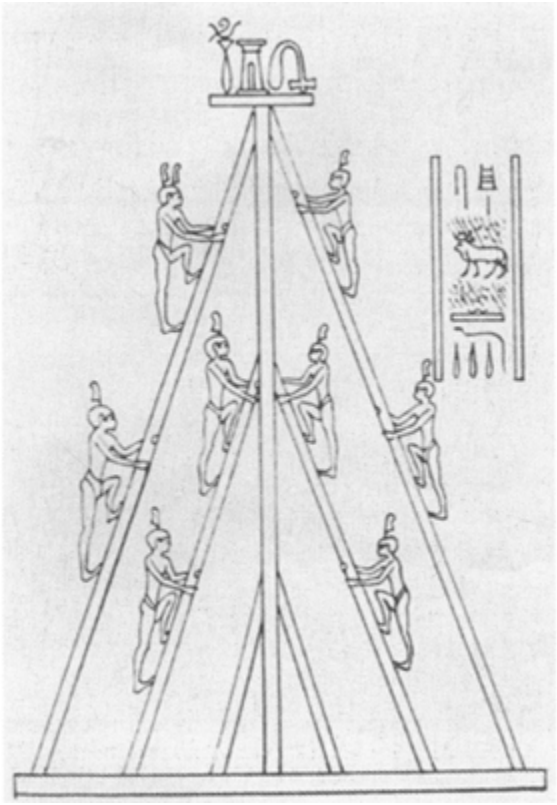
Relief from the Dendera temple believed to depict electric lights and current represented by eels. The technicians appear to be wearing protective uniforms indicated by the shadows on the relief.



Relief from the Dendera temple depicting electric lights.

The Egyptians employed various modes of telecommunication. Concave-mirrors were used to telegraph messages, and much indicates that a specific radio-communication technique existed. The word Amsu means something like ‘the hidden spark’ because it is too distant to be seen. The God Amsu’s symbol could represent the use of an antenna. Ramse II claimed to have received a message from the god Amon which led him to victory over Kadesh. We see here a traditional view of receiving messages from gods, or a practical application of radiocommunication in war. Among hieroglyphics we find symbols that indicate that speakers existed. The word Tsche (written with a snake symbol) is used to indicate talk. *Tschedje* in Egyptian means to speak. Among the hierolglyphic’s we find a mystical instrument of a sieve with a thread around circles, called

Tscher, which could indicate Tsche Ra or a talking ray. (Francois Daumas *Le Temple De Dendera)*



Relief of Communication Must in Dendera Temple

Dendera Temple’s Electric Lamps and Technicians

Dendera Temple’s Electric Lamp and Technicians

Dendera Temple’s Chen batteries (male & female wires)

Dendera Temple’s batteries

DenderaTemple’s Boat signifying a mast with “Lotus” and electric current

“The Eye of Hours”
(Note the Lotus coupling)

Aristotle

Aristotle “The prince of Philosophers” the “Master of those who know” who from his profound wisdom could tell Alexandra the greatest monarch of the world how to win battles, and how to rule conquered countries by changing the air so that complexions of the inhabitant would be altered, and they would be more pliable. Opus Majus II 216. Aristotle himself had learned from the Hebrews.

The following material is taken from ARISTOTLE Minor Works (On things Heard). Loeb Classical Library 1936, and relate to psychoacoustics and related topics. The subject of

attention seeking to explain such things as the selective capacity of attention, its range and span, the number of objects that it can appropriate simultaneously, and the muscle contractions associated with attentional efforts, and distinct articulation.

Physiognomics

The author mentions that he is impressed by the fact that there is some connection between bodily and mental characteristics, and debates the possibility of evolving a science of the subject. His observations on the dangers attaching to such conclusions are very shrewd, and his account of those physical qualities which are significant and those which are not shows great penetration.

The science of psysiognomics, as its name implies deals with the natural affections of disposition, and with such acquired ones that produce any change in the signs studied by the physiognomist. With regard to the senses the condition midway between these is best and most complete, for those to whom it belongs. For impulses reach the seat of intelligence easily, as they have not far to travel: and do not overshoot it, because they move in too small a space. So that the man most completely able to accomplish whatever task he sets before him and the man most likely to be sensitive is the man of moderate size..

Voices appear to come to us from places in which they are produced. *When a man takes a picture or a pipe or a trumpet, and puts it near another man for hearing purposes talks through it, all the sounds seem to be near the hearing. But voices appear clear in proportion to the accuracy of the articulation. For unless there is perfect articulation the voices cannot be clear, just like the seal on signet-rings, when the die is not accurately cut. The direction of travel is

a straight line is obvious in the case of masts and generally with all large pieces of timber when they are put to the test.

(*There appears to be a reference to the camera obscura, and signals travelling between masts)

The Effect of Obstruction On Sound.

Voices which fall violently on the hearing produce an unpleasant effect. Such are both harder to move and travel with the greatest violence, for that which gives way readily cannot resist, but recoils first. The largest weapons travel most violently, and streams which pass through narrow channels, become most violent at the narrowest part. A similar thing occurs with voices and sounds. This is evident; for all violent sounds are hard, as in small boxes and hinges when violently opened, and brass and iron. For from the anvil it becomes both hard and soft, according to when they strike the cooled and now hard iron. Again, with a file when they file and sharpen iron tools and saws, just as the most violent thunder-claps are the hardest, and those waters which are called shattering.

The sounds falling on the ear will correspond to the sources of motion that produced them. Now by strings many detached blows of the air are produced, owing to the shortness of the interval of time the ear is unable to detect these intervals, and the sound seems to us one and continuous, just as occurs in the case of colors; for often sounds which are separate seem to us to dovetail into each other, when they are travelling rapidly. Exactly the same thing occurs in harmonies. For owing to the fact that one set of sounds is combined with another, and that their cessation occurs at the same time, the sounds that occur in between escape us. Cracked and broken voices are those which travel continuously up to a point and then disperse. This is most

obvious in the case of pottery which has been broken by a blow and makes a cracked sound, because the movement is dispersed at the point at which the blow fell on.

Stammering

Sounds have continuous beginnings, and afterwards receive their division into different parts. Voices become broken when men are no longer able to expel the air required to make the sound. For just as the legs and shoulder collapse under strain, so does the regions required for speech. With stammers the trouble resides in the movement of the tongue. For just as when men are running violently it is difficult to change the whole body from a movement in one direction to a movement in another, exactly the same thing happens in a single part of the body. For this reason they often cannot say the thing next in order, but they can pronounce what comes after it easily, when they have made a fresh start or the movement. This is clear; for the same thing often happens with men who are angry because the pace at which breath travels is violent.

On Marvelous Things heard.

It is said that at Abydus a man who was mad went into the theatre and watched for many days, as if there were people acting, and showed his approval; and when he recovered from his madness, he said that he had enjoyed the best time of his life.

In the Electrides Islands, which lie in the gulf of the Adriatic, they say that two statues have been dedicated, one of tin and one of copper, wrought in the old-fashioned style. It is said that these are the works of Daedalus, a reminder of the old days, when escaping from Minos he came to this district from Sicily and Crete. There are many poplars in it,

from which oozes the so-called electron. They say that this is like gum, and hardens like a stone; it is collected by the inhabitants and brought to the Greeks. In Sicily there is said to be a cave, around which is and abundance of flowers at every season of the year, and particularly that a vast space if filled with violets, which fill the air with sweet scent; so that hunters cannot chase hares, because the dogs are overcome by the scent.

In the city of Orchomenus in Boeotia they say that a fox was seen, which, when pursued by a dog, dived into an underground passage, and that the dog dived after it, and made a loud noise of barking, as if it had found a large open space; the huntsmen, assuming some supernatural agency, broke down the entrance, and forced their way in as well; but seeing by some openings the light was coming in *they had a complete view of the whole, and went and reported it to the magistrates.
(*The camera obscura has been looked at at least as early as about –300. The earliest work with Aristotle is said to have observed solar eclipses through it.)

Aristotle and Optics

Roger Bacon writes about Aristotle and optics in his book Perspectiva. According to Aristotle Meteorology, book 3, and Seneca, 'Book on the Rainbow', "they see themselves walking out ahead of themselves". Visual rays, since they weaken as they proceed toward the heaven could be reflected. Thus vapors in the air, and part of them near them can behave like a mirror, it happens that one part of the air behaves like a mirror. Man would see himself when he gazes into the distance or in water. Distance is the greatest impediment, man can not see himself in a large mirror placed a long distance from him, he can not see his reflection in clouds, since they are about 50 miles from us,

as the ‘Book of Twilight’ teaches. When a man looks at something bright and smooth such as a cross made of electrum on a bell tower or other high tower, he will see such a body scintillate strongly when solar or lunar rays fall on it and are reflected to the eye. If we look at the sun or the moon and stars on the eastern or western horizons through watery vapors, which are common in summer and fall, we see those luminaries to be of unusual magnitude, as everybody experiences. It is clear that the cause includes vapors.

When a mirror is placed in the bottom of a container containing water a double image appears. One image is produced by the surface of the water which is reflective the other by the mirror. First refraction from the surface of the water, then reflection from the mirror, and third refraction by the surface of the air. A stronger image is produced by reflection from the mirror, since the latter is dense and is backed with lead, which prevents the passage of a species, consequently, the mirror has ability to receive and return an image. It is commonly believed that in a broken mirror there appear as many images as there are broken pieces of the mirror. But this is so only when the broken parts are placed in different, rather than their original places; for if they retain the positions they had in the unbroken mirror, only a single image will appear. Pliny report in his ‘Natural History’. *Just as divine wisdom is provided for the ordering of the universe so too is this science of vision powerfully useful, and by its agreeable beauty, for by reflection one thing can appear to be many, or even an infinite number, thus sometimes we see in the heaven several suns or moons simultaneously.*

Therefore if we arrange mirrors, as many as we choose. Thus for the benefit of the commonwealth and against infidels, apparitions of this sort could be produced usefully. It is believed that demons reveal military encampments and

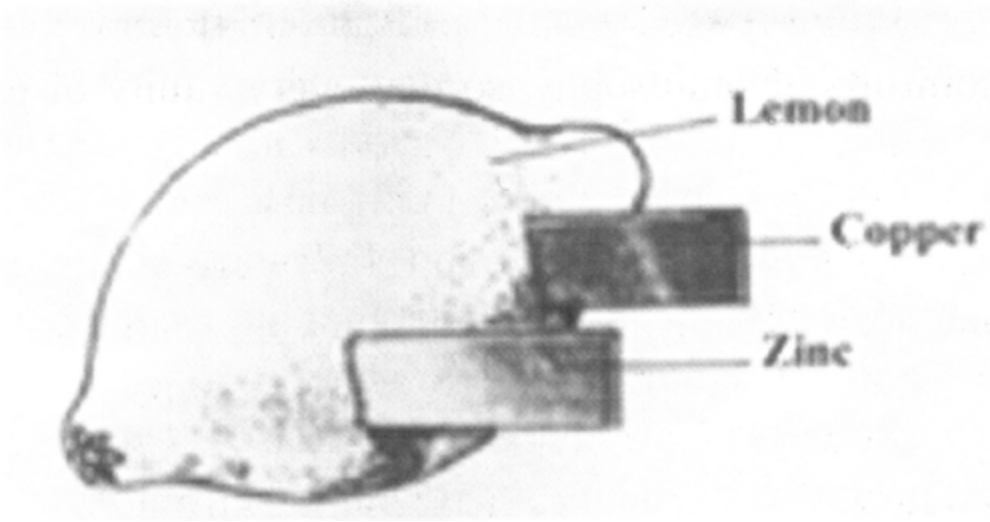
armies and many miraculous things to people in this way; and by reflected vision, anything hidden in an out-of-the-way place in cities, armies, and the like can be brought to light. For the dragon that poisoned and corrupted animals and men with its breath was discovered by the philosopher Socrates in its hiding places in the mountains, as histories confirm. Similarly, mirrors could be erected in high places, facing hostile cities and armies, so that everything done by the enemy would be seen. And this can be accomplished at any distance we desire, since according to the 'Book On Mirrors', one and the same thing can be seen by means of as many mirrors as we wish if they are properly situated. Therefore, they can be situated near of far, to enable us to see an object as distant as we please. For thus Julius Caesar, when he wanted to conquer England, is reported to have erected great mirrors, so that from the coast of Gaul he would be able to see beforehand the disposition of the English cities and encampments. Mirrors can be so arranged that whatever we choose will appear as many times as we like in a house or on the street, and every observer will truly see them; and when the observer runs to the place where they saw these things, they will see nothing there. For the mirrors can be hidden from things in such a way that the images will be in the open and will appear in the air at the intersection of the visual rays and the cathedral; therefore, the observers will run to the places where the images were seen and will suppose that the objects are there, although nothing will be there except an image. Therefore according to such things touched upon, concerning reflection and related matters, not only can we produce results useful to friends and terrifying enemies, but these results are able to offer the great comforts of philosophy, so that every vanity of jesters will be obscured by the beauty of the marvels of wisdom, and the people will rejoice in the truth, banishing to a great distance the fallacies of the magicians. The [wonders] producible by refraction are even greater, for it is

easily evident from the forgoing rules that the very large can [be made to] appear very small and vice versa, and that distant objects can [be made to] appear very close and close things distant. For we can so shape transparent substances and so arrange them relative to the eye and [visible] objects that the rays will be refracted and deflected in whatever direction we wish, and thus we will see them near or far, under whatever angle we choose.

Thus from an incredible distance we would be able to read the smallest letters and count particles of dust and sand, on account of the size of the angle under which we see them. And we would scarcely be able to see enormous bodies from nearby because of the smallness of the angles under which we see them, since such vision is determined not by distance, except accidentally, but by the size of the angle. Thus a boy could appear to be a giant and a man to be a mountain of whatever size we choose, since we can see the man under as large an angle as the mountain and as near as we wish. Likewise, a small army would appear very large, and a distant army would appear close (and vice versa). Moreover, thus we could make the sun, moon, and stars appear to descend to the terrestrial realm and appear over the heads of the enemies. And we could conduct many similar feats, so that the mind of a mortal ignorant of the truth could not withstand them.

(p 333 Roger Bacon and the Origins of PERSPECTIVA In the Middle Ages David C.Lindberg Clarendon Press Oxford 1996)

Classical Physics.



A correct flows between the copper and zinc.

Wave Interference.

What happens when a wave meets another wave? Interference is a property of waves that is observed when two waves meet. It happens when two waves meet one another. One can think of it as if each individual wave delivers an instruction to the surface. If two waves meet at the crest at the same time, they both hand out the instruction “water up 5 centimeters”. The result is the water moved up ten centimeters. Double the value of the instruction of each wave. This is termed constructive interference. If instead two waves meet as follows: The crest of one meets with the vale of the other, the water receives the instructions “Up 5 centimeters” from one wave, and “Down 5 centimeters” from the other. The result is the water doesn’t move. This is an example of destructive interference. If the two waves meet under other circumstances the result

is anywhere from 10 centimeters down or 10 centimeters up. The existence of destructive interference separates waves from particles. Two waves can meet at one point with total absence of change. Particles do not behave in this fashion. One cannot send two footballs to one particular point and come up with no footballs.

Attenuation

Where there are two generators acting at the same time it is common sense that the atom cannot move in two different directions at once. Clearly, it receives compression waves of equal strength subjected to double pressure but will not be displaced at all. If the compressions are succeeded by identical rarefactions it will still not be displaced. If, however, two generators are placed close together and radiate in the same direction their effect on a distant atom will show a similar variation. If both generators are in perfect synchrony their effect will be the same as a single large generator. If, however, one produces a compression while the other produces an equal rarefaction, then they will cancel one another out when observed at equal distances. The situation where the two generators are always exactly in step with one another is know as being “in phase”. The process by which one oscillation appears to add itself to or subtract itself from another is the phenomenon of interference. When two generators beams intersect at right angles the atom responds to the balance of forces at each moment of the cycle. If the compression waves arrive in phase the movement of the atom will be in a path that bisects the angle between the beams. If the beams travel eastward and northward the atom movement is from northeast to southwest.

Standing Waves

Standing waves are produced at some point where two beams intersect or a single beam is reflected. This results in production of points of very high energy in some places and points of very low energy in others, in this way an energy bottle may be created.

Can Light Give Us Darkness.

Destructive interference between lightwaves can result in places with darkness. One may observe this by watching a streetlamp through a tightly knit curtain. One may observe patterns of dark and light areas. In the Amphitheater, there a places where destructive interference occurs. For example between soundwaves coming directly from the stage, and those reflected from one of the walls. If one attends a concert in such an arena and experiences such a phenomenon, there is nothing else to do but move.

Can a Magnet Interfere With Light?

A point in the landscape can be viewed using an ocular. Choosing a reflector instead, because the optician was unable to produce large enough lenses. The earth’s magnetic field causes aberration and the lenses are deformed.

Visionary Phenomena

Some extraordinary phenomena are alleged to have occurred, in France during the reign of Pepin le Bref (c.600 AD). The air seemed to be alive with human shapes, mirages filled the heavens and sorcerers were seen among the clouds scattering powders and poisons with open hand, crops failed, cattle died, and many humans perished. The number who perished throughout the kingdom almost exceeds

belief. Such visionary epidemics recurred in the reigns following.(Circa 1000-1200 AD).

The folly took possession even of strong minds. The cloud-phantoms were accused of being hell-born illusions. Strangers in country places were accused of descending from heaven and were killed without mercy. It was time for an intervention on the part of the church. Such visionary epidemics continued in the reigns that followed, and all the power of Charlemagne was put in action to calm the public agitation. An edict renewed by Louis the Pious, forbade these manifestations under the heavies of penalties. All defeated forms of worship that conspired against Christianity were defeated. It should be understood that in the absence of the aerial beings that the judgement would fall upon those that claimed to have seen them. The ships in the air sailed back to the port of oblivion, only to be replaced by other marvels to relate. In the time of St. Louis flourished the Rabbi Jachiel a celebrated Kabalist. There is some reason to believe that he had glimmering on the use of electricity. On the approach of night a radiant star appeared in his lodgings, the light being so brilliant that no eye could gaze thereon without being dazzled, while it darted rainbow colors. It appeared inexhaustable and needed no replenishment. When the Rabbi was annoyed by intruders at his door, he struck a nail fixed in his cabinet producing simultaneously a blue-spark on the head of the nail on the door-knocker, to which if the intruder clung he received a severe shock. Albertus Magnus lived at the same period. In 1393 in the reign of Charles VI, it was considered that the King was rendered mad by sorcery. The ministers of the court resolved to pit a magician against the sorcery but in the mean time the young monarch recovered. Five years later, the king had another attack, and two Augustine friars were sent for the purpose of effecting a cure. Their conduct was so outrageous that they were executed. A third attack in

1403 was combated by two sorcerers. They made a magic circle of iron of immense weight, which was supported by iron columns of the height of a middle-sized man. The sorcerers proceeded with their incantations, but were unsuccessful and burnt for their pretenses. The Duke of Orleans then appears to have fallen under the same suspicion of sorcery. He had received a friar magician into his castle who became the active instrument in the prosecution of his design.

About the year 1400, the belief in nightly meetings of witches had become almost universal. In Paris alone, during the reign of Charlex IX, there were said to be no less that thirty thousand alledged sorcerers, and more than three times that number during Henry III. During the earlier part of the sixteenth century trials for witchcraft in France were of rare occurrence. The numerous writings of scholars illustrated their various theories regarding these phenomenon served to standardize the sorcery creed of all continental countries. The world was full of extravagancies and no one knew whether anyone whom he might meet was not gifted with occult powers. The terror and imagery accounts for the craze which devastated Europe in the 17th century. The eighteenth century in France was prolific in the rise of occult history. Many Masonic lodges and sects were started throughout the country and helped in many ways in bringing about the French Revolution.

With the beginning of the nineteenth century the influence of Franz Mesmer led to the growth of Spiritualism. In the middle of the nineteenth century all sorts of absurdities existed in Paris. Jean Baptiste Vianney opened a church where thousands of incurable people came from other parts of the world. His church stood open day and night, and people waited for hours or days to meet the good healer. Spiritualism arose in France, as in other countries from the awakening of psychic powers evolved by Mesmer’s

and others deep interest in magnetism. It gained an immense foothold and exerted a widespread influence upon the popular mind. In an essay ”Philosophical Teaching of magnetism” the Baron Du Pote” stated: *”You savants of our country: you have not shown yourselves better informed than the Siamese”.* For these sixty years it has been shouted in your ears; *The magnetizers march to the discovery of a moral world;* all the phenomena they produce indisputable proves its existence. The first well marked impulse of experimental spiritualism, was due to the visits of Mr. D.D. Home, the celebrated professional medium, who found in France and excellent field for their demonstrations. Mr.Home had related his experiences in two volumes published under different periods, supported by many friends who witnessed the most remarkable experiences of their kind. On one occasion in the presence of the Emperor the Empress and Mr. Home, a pen, ink, and paper were placed on a table. A spirit hand was seen, which dipped the pen in the ink and deliberately wrote the name of the first Napoleon, in a perfect facsimile of that monarch’s handwriting. The Emperor asked if he might be permitted to kiss this wonderful hand, when it instantly rose to his lips, subsequently passing to the empress and Mr. Home. The Emperor saved the precious autograph and inscribed with it a memorandum to the effect that the hand felt warm, soft and resembled exactly that of his great predecessor and uncle. On the subject of hypnotism a leading paper, wrote” *Although sonnambulism has been a hundred times annihilated by the Academy of Medicine. It is more alive than ever before in Paris; in the midsts of all the lights of the age, it continues, right or wrong, to excite the multitude. Protean in its forms, infinite in its manifestations; If you put it out of the door, it knocks on the window; if that be not opened, it knocks on the ceiling, on the walls; it raps on the table at which you innocently seat yourselves to dine or for a game of whist. If you close your ears to its sounds, it*

grows exited; strikes the table, whirls it about in a giddy maze, lifts up its fees, and proceeds to talk through mediumship, as the dumb talk with their fingers.

Franz Mesmer.

Mesmer was born in the lakeside town of Constanz in 1734, and after receiving a philosophical education from the local Jesuits he studied medicine at the university of Vienna and qualified as a physician in 1767 with the publication of a MD thesis on the influence of celestial gravity on human physiology. He announced that he had identified a previously unrecognized form of magnetism whose application did not require the disputed use of ferrous metals. Although it was not physically detectable he insisted that it could be mobilized by the will of an initiated practitioner and broadcast to living bodies in the vicinity. In a series of conspicuously uncontrolled trials he reported that the most favorable outcome was obtained when the subject reacted by falling into a convulsive trance. These fits and trances began to assume an emblematic importance among the significant proportion of his clientele. In 1778 he felt obliged to emigrate to Paris, where his orthodox profession and previously unacknowledged force of nature tormented its clients and was heralded as the medical millennium. The trances and ‘fits’ alone were worth the price of admission. Political events on the other side of the English Channel soon cast a shadow of suspicion over anything associated with France. James Braid began inquiries into the phenomenon in the early 1840’s. Braid noticed that the entranced subject was invariably unable to open his eyes, which led him to the belief that the trance was induced by something which he described as the neuromuscular exhaustion induced by the protracted state encouraged by the practitioner. Like a ‘Yankee in the court of King Arthur’ Braid was unrecognized before his time. Fully aware of this pathological difficulty he was inclined to try the effect on

congenial deaf mutes. From having witnessed its extraordinary power arousing the excitability of the auditory nerve. The result of his first trials was beyond his most sanguine expectations where he scarcely met with a single case of the congenially deaf mute where he succeeded in making them hear to some degree. Braid records page after page of bizarre results - He recognized for example that the scalp was innervated - i.e anatomically supplied by the fifth cranial nerve, and conceded that none of its fibers passed directly through the skull to the brain beneath. His work foreshadows modern concepts of mapping the body surface onto the cerebral convolutions of the brain.

Marshall Hall wrote on automatism. “Even in the most purely volitional movements, the will does not directly produce the result. The will plays, as it were, upon the automatic apparatus by which the requisite neuromuscular combination is ‘brought into action’. In each of these acts the coordination of a large number of muscular movements is required. Very complex are their combination that the professed anatomist would be unable to say exactly what is the precise state of each of the muscles concerned in the production of a given musical note or in the enunciation of a particular syllable. We simply conceive the tone or syllable we wish to utter and say to our automatic self, do this and the well trained automation executes it. What we will is not to throw this or that muscle into action, but to produce a certain preconceived result.

The revival of the alternative non Freudeian unconscious began in the 1950’s when its reconstruction under the auspices of artificial intelligence was one of the factors responsible for the timely decline of Behaviorism. Research into automatic aiming devices during the Second World War had shown that the control mechanism needed to pursue and destroy an unpredictably moving target required internal representation in which to register, update, and

compute the relevant information. Although no one claimed that such an representation was conscious of its own deliberations, the necessity of such a mechanism gave credence to the notion of unconscious information processing and the cognitive revolution ensued as a result.

Because of unilateral neglect, we are conscious of a relatively small proportion of what we know and that we are the unwitting beneficiaries of a mind that is, in a sense, only partly our own.

Franz Mesmer and subject in a trance.

The Secret of Secrets

There is an immense literature which surrounds Alexander the Great and Aristotle his teacher. In addition to the forty genuine Aristotlian works known in Latin in the Middle Ages other works derived from Hebrew or Arabic. One of these and the most diffused of all these works, is the one which bears the Latin title Secretum Seretum. It enjoyed immense influence and the widest circulation from at least the tenth (and probably significantly before) to the seventeenth century, the work was read in the Slav lands of Eastern Europe, in Scandinavia, North Africa and the Middle East. The origin of the “Secret of Secrets” is veiled in obscurity. All known versions go back to the Arabic original dated AD 941, and it is clear that the work contains a great deal of Greek material. The Secret as it has come down to us, evidently underwent a long period of gestation. It probably originated as a “Mirror for Princes”, a familiar medieval literary form in which a wise man (Aristotle) offers moral and political advice to an eminent leader (Alexander). The translation from Arabic into Hebrew is characteristic of the thirteenth and early fourteenth-century Hebrew translations of Arabic philosophical, scientific and medical works. The Hebrew translation of the Arabic “The Highest of all Secrets” was published in 1908 by Moses Gaster in the Journal of the Royal Asiatic Society. Since the substantial work has been carried out on the work on the Arabic version with the transmission into many other languages during the Middle Ages and early modern period, notably Russian. The result of the translation is a very difficult Hebrew narrative, which often needs the help of other versions of the text to decide the exact sense of ambiguous expressions. Moses Gaster copied the manuscript at the British Museum in 1917 and

produced an English translation which had to account for every Hebrew sentence, even when it was nearly unintelligible.

The theoretical basis of the view that the causal chain leading to forecasted events happens, necessarily and cannot be diverted from its natural course, man has yet the freedom to produce another causal chain, which could equally cause desirable events. This view seems to be a shadow of Alexander of Aphrodisias's philosophy, which was known in Arabic before this. Alexander discusses in "De fato ad imperatorem" (200.28-201)

(Amital I. Sptizer Pseudo-Aristotle The Secret of Secrets sources and influences 1982).

"Bending of The Minds"

The Table's eight Discourse is about special wisdoms and magical secrets concerning idols and bending people's minds. The eight Discourse runs as follows: The Eight Discourse. On special wisdoms and secrets of trickery concerning images (i.e. talismans) and the bending of minds, and of the property of precious stones, of plants and animals, and marvelous words (i.e. spells) from the medical secrets.

The Eleventh Century

Under the tremendous stimulation of the Crusades an entirely new type of organization developed. The end of the eleventh century was the turning point in the history of mankind. It is a period of transition. Knowledge and culture is being transmitted as fast as possible from one group of mankind to another. Concerned with speculation and the reporting of speculation, man has pursued this subject all through history and all over the world. The destiny of man

with his place in the universe and what he can do about it. He tries to see things in a simplified manner, like they would appear from a great distance in a sort of vision. A chariot which carries the highest hopes and noblest thoughts of mankind has been stopped to change horses in an inn. The old postillions are being thanked and new ones are taking charge. The chariot is stopped, but the fresh horses are pawing the ground impatiently. It is the same old chariot but the horses and postillions are changed from time to time and the people riding in it change too, one by one... but mark this, it is a chariot that never comes back. It goes on and on as the spirit of mankind moves it; it has been driven by Greeks, freaks, and Romans, by people of all kinds, lately Muslims, now by Jews and Christians. Nor does it matter much who drives if it goes safely forward in the right direction.

(Introduction To The History Of Science, George Sarton, 1927)

The New Science

The next stage was the development of the idea which acted with great force throughout the Middle Ages – the idea that science was *dangerous* This belief had its roots in very ancient origin. “From the time when Egyptian magicians made their tremendous treat that unless their demands were grated they would reach out to the four corners of the earth, pull down the pillars of heaven, wreck, the abodes of the gods above and crush those of men below, fear of these representatives of science is evident in the ancient world”. Science has helped to create a regime of cultural control, where the individual is rendered subservient, powerless to effect or resist change.

Nicole Oresme one of the greatest men of science of the fourteenth century, and one of the founders of the French

scientific language and of French prose in general. He tried to show that many magical or marvelous things can be accounted for in rational terms, either mechanically or by illusions or misleading sensual perceptions, such as optical illusions. Thus these effects can be produced by physical means. He makes what is perhaps the earliest reference in European literature to the famous rope trick (climbing up a rope thrown into the air without visible support). Oresme's description of various fascinating phenomenon reveals a remarkable appreciation of psychological difficulties. He discusses sound (which may be nothing but motion) and hearing, light and vision. He admits the possibility of thought transference, but reject the suggestion that a man's thought can move exterior objects without material contact. He sees clearly that small causes may have immense effects, or small differences may be immeasurably multiplied in the consequences.

In France in 1624, some young chemists at Paris taught experimental science and advanced the ideas of Aristotle, the faculty of theology beset the Parliament of Paris, and the Parliament prohibited these new researches under the severest penalties. The same happened in Italy. The first setting was the Academia del Climento at Florence in 1657. This academy was a fortress of science, promised great things for science; and was open to all talent; its only stipulations was the repudiation of any particular sect, or philosophy, and the obligation to study science by the pure light of the experimental method. Heat, light, magnetism, electricity, projectiles, and the incompressibility of water were studied by the right method and with results that enriched the world. Eventually the academy was denounced and closed. A similar fate followed other academies throughout Europe.

(A History of the Warfare of Science With Theology In Christendom, Andrew White, p 173, 1897)

Magic in the Sixteenth Century.

Magic reveals the secret powers of nature through a curious search sought out of order, and thereof oftentimes do arise marvelous miracles, in themselves a servant.

In the sixteenth-century Europe, magic was understood as an art that could bring about particular effects on things or people by insensible means. Although magic was condemned by the Catholic church, its source of power beyond that of ordinary people proved irresistible. Often those that became involved in magic were members of the clergy. Although magic was regarded as a secret art, it became increasingly visible though the publication of various books on its practice. In essence all occult powers that could be harnessed by the magician categories. There was the kind of magic which relied on the intervention of supernatural, personified intelligences for bringing about effects. On the other hand natural or spiritual magic concentrated on the effects produced by occult natural causes. According to *prisca theoligia.* the original theology, God had revealed to Adam knowledge about the structure and processes of Creation. This secret wisdom had been transmitted through a select group which included Abraham and Moses, Hermes, Orpheus, Pythagoras and other magi. This knowledge was hidden through the use of symbols and ‘signatures’ that all required the correct interpretation. They included unknown properties whose rare effect may be readily known in modern times. According to Aristotle we cannot know anything that is outside the realm of the sensible. *Manifest* properties were divided into various qualifications which arose from the combination of their effects and the perceptibility to the senses. Belonging to this category were gravity, magnetism, and musical resonance, all occult forces that acted at a distance, where binding exerted their influence. A variety of empirical techniques

were utilized to bring about effects of things or people. Many of these techniques were closely guarded secrets known only to the initiates. The miraculous changes brought about by these practitioners included psychological and psychosomatic changes in human behavior, and included the ability to manipulate emotions, and heighten the desire. The effectiveness of magic was based on several related principles, the concept of *pneuma* or *spiritus mundi. Spiritus* was a subtle fluid medium that permeated the entire cosmos and served as the principle mechanism for the influence of all things. This invisible and extremely active substance could intermingle with earthly matters and bring about changes in its form. The powerful effect that music can bring about on the passions relied on musical sounds moving through the air and impinging on the human spirits. The second magical principle relates to in the potency of particular symbols including numbers and letters. Hence Agrippa's *De occulta philosophia* (1510) explained that the magical powers of names, incarnations, and mathematical formulas resided in the fact that these entities mediated between the intellect and the relation to the concept or thing that they stood for. Pythagoras demonstrated the correspondence between simple arithmetic ratios and musical consonances, in a similar way numbers served as a means of rendering perceptible what would otherwise remain outside the grasp of human sense experience. A central figure in the development of magical doctrine was Marsillo Ficino (1433-1499), a founder of Cosimo de' Medici's Florentine Academy in the 1450's. Ficino's commentaries on the works of Hermes Trismegistus and Plato, and his own *De triplici vita* (1489 provide the background to many later texts on magic. Another influential text was Johannes Trithemius *Steganographia (1499)* script that circulated in manuscript until it was printed in the early seventeenth century. A work primarily dealing with cryptography and the communication of messages by occult but natural means,

and invocation and manipulation of spirits. The third important magical principle was the belief that artificial instruments could serve to overcome the limits set on the unaided human senses. In the latter part of the sixteenth century, many devices of incredible sophistication were being constructed by clockmakers and mechanics (feks.. Augsburg) which amply testified to the success of this manipulative approach. What has become known as the “sympathetic telegraph” was first described in Giambattista della Porta’s *Natural Magic,* first published in Naples in 1558. This imaginary device was based on the “invisible hand” of the earth’s magnetic field, and consisted of two compasses. The compass dial, rather than showing directions, were labeled with letters of the alphabet. The concept included that the movement of one needle supposedly caused the identical movement of the other, allowing a message to be sent, letter by letter, from a distance. And this was 300 years before Samuel Morse and Western Union! The mysterious response of the compass to magnetism has most likely inspired many fancies in the past. This concept of a magnetic telegraph appeared often in later literature, Galileo debunked the instrument as a fable. In 1711, a distraught wife wrote in *The Spectator*, a London periodical for advice on how to bear the long absence of her beloved husband. The essayist Joseph Addison, an early version of Ann Landers offered some practical advice. He inquired if some magician could present a pair of Porta’s synchronized magnetic needles, enabling them to communicate with each other, even “when they were guarded by spies and watches, or separated by castles and adventures.” He also made a suggestion that, in addition to the alphabet, the “lover’s dial plate” should contain “several entire words which always have a place in passionate epistles.” The message “I love you.” For example, would require only three needle settings instead of eight.

The Vitruviun arts such as military technology, and theatre design became widely known as a natural magician *par excellence. Magia naturalis* was the most important modern work that addressed this kind of technological innovation. Instruments and the effects they could produce were reputedly regarded with suspicion by scholars who were mistrustful of the senses as a means of acquiring knowledge. Sight, for example, could be deceived by the use of lenses, mirrors and tricks, while the ear might be deluded by artificial bird-song. Such devices were also viewed in a more positive light, as a means of communicating with higher intelligences, controlling and understanding curiosity that could be channeled into the development of new technologies and the effective exercise of political powers.

H.C. Aggrippa, *Of the Vanitie and Uncertaintie of Artes and Sciences*, trs James Sandford London, 1569)

W. Eamon, *Science and the Secrets of Nature Books of Secrets in Medieval and Early Modern Culture*, Princeton 1994)

Ben Franklin’s Lightning Rod

While the most learned of scientific laymen were laboring to deduce a science of meteorology from our sacred books, there appeared in European society a mass of traditions and observances which had been lurking since the days of Aristotle. The beliefs in classic antiquity regarding lightning took shape in myths representing Vulcan forging thunderbolts. Plato, Aristotle, and many lesser lights, attempted to account for the causes of lightning on natural grounds. In Rome, Lucretius, Seneca, Pliny, Cicero and others transmitted the beginning of the scientific basis for explanations regarding lightning. In the writings and scientific spirit that followed, they might have come to something of permanent value had it not been hampered by the supposed necessity of conforming to the letter of the scripture.

About the beginning of the ninth century appeared the triumvirate of a new science that could have been rapidly evolved, but the theological current was too strong. The divine use of lightning, both for rescue and for punishment, citing from the Holy Scripture “prince of the power of the air”. The almighty wrapped in thunder and sending forth his lightnings. The strength of the current which overwhelmed these thoughts are seen in the thirteenth century in the work of the Dominican monk, John of San Geminiano, who gave forth his *Summa de Exemplis* for the use of preachers of his order. Over two hundred pages of this large volume are devoted to illustrations drawn from the heavens in what merely amounts to reconciling the speculations already made earlier. The thoughts of Aristotle fills the whole horizon, and his utterances are second only to the Holy Writ.

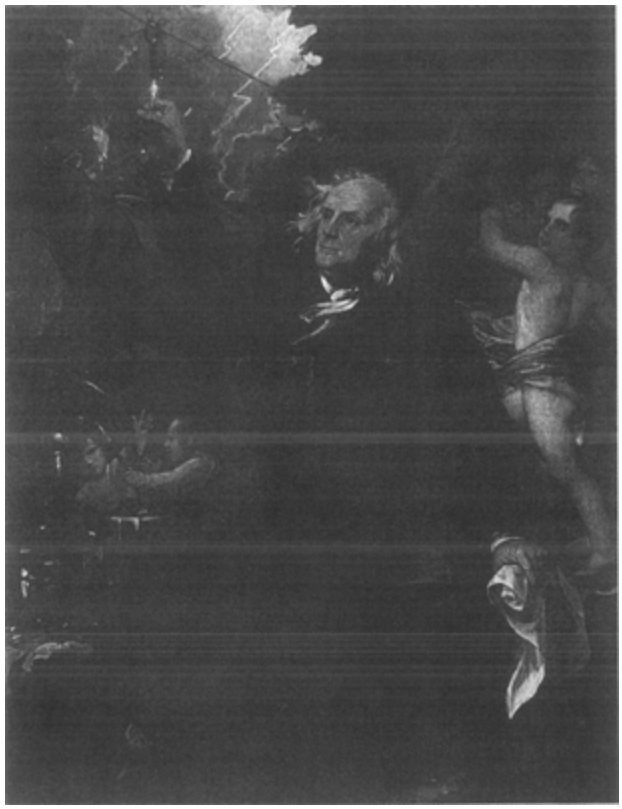
In 1752 many experiments on atmospheric electricity were performed in Europe. Evidence of electrification was found at most times, but especially when there were thunderclouds in the sky. Canton discovered that the air in a room could be electrified and could acquire the same kind of electricity that a may be attached to a charged body. In 1752 Franklin made his experiments with the kite on the banks of the Schuylkill; and, at the moment when he drew the electric spark from the cloud, the whole tremendous fabric of meteorology lit up. When it comes to lightning, it had already been sent by the Almighty upon Egypt, and cliches all by insisting that God showed at Mount Sinai his purpose to startle the body before impressing the conscience. While the theory of diabolical agency in storms was dying, very shrew efforts were made at compromise. Church bells might, under certain circumstances, disperse storms by agitating the air. Another argument used for this purpose was that the bells were consecrated instruments for this purpose, “like the horns at whose blowing the walls of Jericho fell.” The old system of deducing scientific truth from scriptural texts was replaced in the development of scientific knowledge; and eclectic power, acting through thousands of subtle channels, was made to aid this development, and the superiority of science was revived. More and more the “Prince of the Power of the Air” retreated before the lightning-rod of Franklin, for his lightning-rod did what exorcisms, and holy water, and processions, and the ringing of church bells, and the rack, and the burning of witches had failed to do. Then came into the minds of multitudes the answer to the question which had so long exercised the leading minds of Europe and America, namely, “Why should the Almighty strike his own temples, or suffer Satan to strike them? In America the earthquake of 1755, was widely ascribed especially in Massachusetts, to Franklin’s rod. A sermon was published on the subject by the Rev. Thomas Prince, pastor of the Old South Church, he expressed the

opinion that the frequency of earthquakes may be due to the erection of “iron points invented by the sagacious Mr. Franklin”. He argued that “in Boston are more erected than anywhere else in New England, and Boston seems to be more dreadfully shaken. Three years later in Boston John Adams, railed and foamed against the presumption of philosophy in erecting iron rods to draw the lightning from the clouds. In Philadelphia a popular lecturer on science explained that “the erection of lightning-rods is not chargeable with presumption not inconsistent with any of the principles either of natural or revealed religion”. In England, the first lightning conductor upon a church was not put up until 1762, ten years after Franklin’s discovery. The spire of St. Bride’s Church in London was greatly injured by lightning in 1750, and in 1764 a storm wrecked it and it had to be mainly rebuilt. The protestant Cathedral of St. Paul’s in London, was no protected until sixteen years after Franklin’s discovery, and the tower of the great Protestant church at Hamburg not until a year later still. In 1783, it was declared on excellent authority, that within thirty-three years nearly four hundred towers had been damaged and one hundred and twenty bell-ringers killed in Germany. In Italy the tower of St. Mark’s at Venice, in spite of the angel at its summit and the bells consecrated to ward off the powers of the air, and the relics in the cathedral hard by, and the processions in the adjacent square, the tower was frequently injured and even ruined by lightning. In 1388 it was shattered; in 1417 and again in 1489, the wooden spire surmounting it was utterly consumed; it was injured again in 1548, 1565, 1633, and in 1745 was struck so powerfully that the whole tower which had been rebuilt of stone and brick, was shattered in thirty-seven places. The lightning rod was introduced into Italy by the physicist Beccaria, In 1766 a rod was placed upon the tower of St. Marks’s, and it hasn’t been struck again.

The Kite, the Sentry Box, and the Lightning Rod

Franklin erected a form of lightning rod which provided him with ample means of making experiments on electrified clouds. Franklin makes clear in his autobiography that his sentry-box experiment was superior to the kite-experiment. With this instrument he verified the results obtained in Europe and those previously obtained by him with the kite. Those experiments which Franklin performed with lightning and kites were previously performed by others including the Frenchman Jacques de Romans who claimed priority in the invention of this instrument. He announce that his first experiment on electricity was performed at Marly and announced to the public in the eighteenth century.

Moon Madness the subject of 17th Century French engraving of lunatics dancing in square.



A Whirlwind for Mr. Franklin

A great American ”Citizen of the World” portrayed in his warm, wise and witty correspondence. An amateur researcher in science. Franklin found his data everywhere. A wind gust swirling up the road was a phenomenon to be observed, followed, recorded and communicated to his fellow philosophers. The following letter was written to Peter Collinson, London merchant and naturalist.

Dear Sir,

As you have my former papers on Whirlwinds, ect. I now send you an account of one which I had lately an opportunity of seeing and examining myself Being in Maryland, riding with Col. Tasker, and some other gentlemen to his country-seat... we saw in the vale below us, a small whirlwind beginning in the road, and shewing itself by the

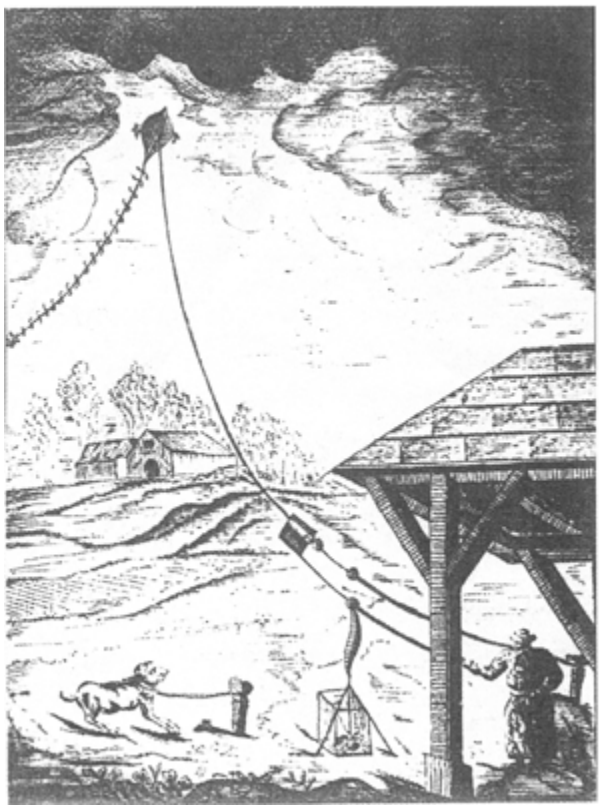
dust it raised and contained. It appeared in the form of a sugar-loaf spinning on its point, moving up the hill toward us, and enlarging as it came forward. When it passed by us, its smaller part near the ground, appeared not bigger than a common barrel, but widening upwards, it seemed, at 40 or 50 feet high, to be 20 or 30 feet in diameter. The rest of the company stood looking after it, but my curiosity being stronger, I followed it, riding close by its side, and observed its licking up, in its progress, all the dust that was under its smaller part. As it is common opinion that a shot, fired through a water-sprout will break it, I tried to break this little whirlwind, by striking my whip frequently through it, but without any effect. Soon after, it quitted the road and took into the woods, growing every moment larger and stronger, raising, instead of dust, the old dry leaves with which the ground was thick cove3red, and making a great noise with them and the branches of the trees, bending some tall trees round in a circle.... I accompanied it about three quarters of a mile, till some limbs of dead trees, broken off by the whirl, flying about, falling near me, made me more apprehensive of danger; and then I stopped, looking at the top of it as it went on, which was visible, by means of the leaves contained in it, for a very great height above the trees.... Upon my asking Col. Tasker if such whirlwinds were common in Maryland, he answered pleasantly, "No not at all common, but we got this on purpose to treat Mr. Franklin. And a very high treat it was, to".

Dear Sir Your affectionate friend and humble servant B.F.

(*A History of The Warfare of Science With Theology*, In Christendom Andrew D. White 1897)

The warnings that God gives are like caution signals flashing at each crossroad, they are manifestations of Divine mercy. Because of His compassion with the sinner, He is

prepared to put the affliction on a house. *I will place upon a house* (14:34). It would be dangerous for people to accumulate sins indefinitely without atoning them. Gods foreknowledge and mans free will appear to exclude each other, even though those two principles can coexist in perfect harmony with each other. It cannot be denied, that people look upon the rules regarding forbidden and permitted as seemingly detailed trivial restrictions. *Do not place a stumbling block before the blind.* This prohibition applies to giving advice to a person who is unaware to trick him into giving up his field. Avoid any action which even indirectly could lead another to a wrongdoing such for instance committing a sin of which he might be ignorant or not fully aware.



What's In A Name

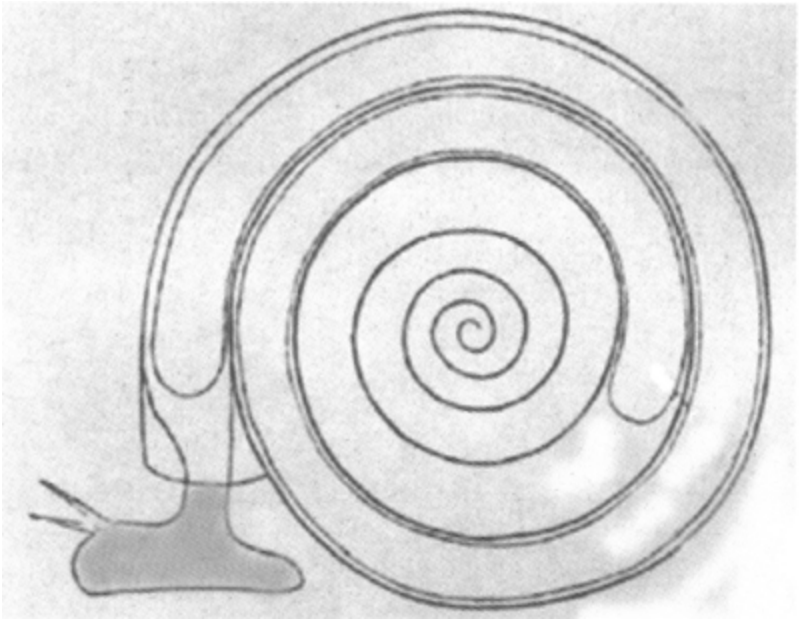
The Troll from Menlo Park
Editio intrumentorum (Latin)

Distribution of documents - representation of defense material. An expression used in a civil -law process to mean the responsibility someone has in possession of a document has to the outcome or verdict of a case.

Edison Thomas Alva (The Troll from Menlo Park) and the Phonograph.

First it said 'Mary' the phonograph is celebrating it 120 year birthday in New Jersey (1877). Followed by "had a little lam" $18 it did not say much, next "my God in heaven".

Nikola Tesla
***Testacella* - a snail (Gastropod)**

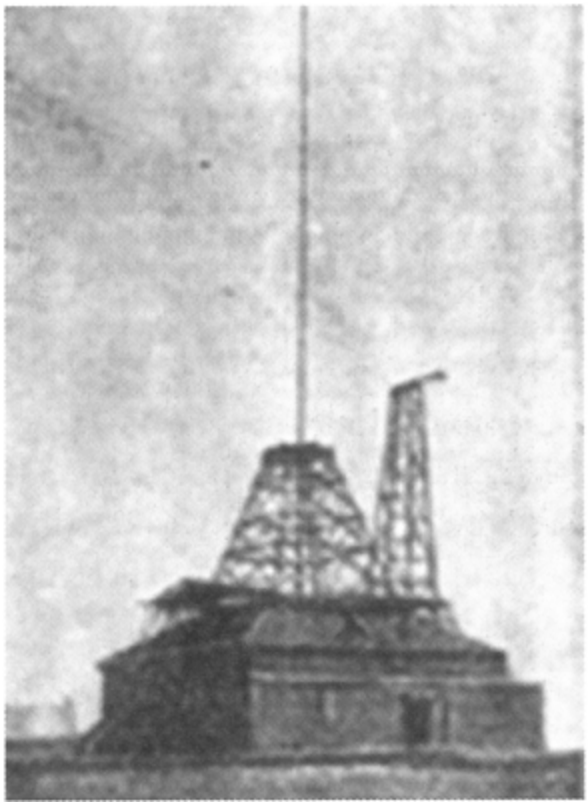


Testamentum holographum.
Testamentum– Last Roman emporor - concerned with a test notary public written or oral.

Fergussen Scottish proverb p. 112 1595.
"Ye drive a snail to Rome"

Nikola Tesla

Scientific genuis whose inventions stemmed from an extraordinary visionary faculty of a paranormal nature. His inventions flashed into his mind as working units, complete to the details of component design & size. “After a while this effort grew to be almost automatic and I gained great faculty in connecting cause and effect. Soon I became aware, to my surprise that every thought I conceived was suggested by an external impression. Not only this but all my actions were prompted in a similar way. In the course of time it became perfectly evident to me that I was merely an automaton endowed with the power of movement corresponding to stimuli of the sense organs and thinking and acting accordingly. The practical result of this was the art teleautomation”. “When a word was spoken to me the image of the object designated would appear. The theory I formulated is that the images were the result of a reflex action from the brain on the retina” under great excitation”.



Tesla’s Radiostation in Colorado (1899)

Tesla’s Discovery of the Rotating Magnetic Field.

In the *Electrical Experimenter Magazine* in 1919 Tesla reveals extraordinary occurrences and experiences in the world’s greatest inventor’s life, such experiences that do not fall to the lot of ordinary mortals. Besides inventing Tesla knew the rare art of painting word-pictures, he does this in a mastery fashion. He explains that where he lived was low marshy and he suffered from malaria fewer which never left him despite continual intake of quinine. One day he was handed a few volumes of new literature unlike anything that he had ever read before and so captivating that it made him forget his illness. They were the earlier works of Mark Twain and to them he attributed the miraculous recovery which followed. Twenty-five years later he met Mr. Clemens and told him of the experience, and was amazed to see the great man of laughter burst into tears. He tells how he discovered the rotating magnetic field. At the age of ten he became acquainted with various models of classical scientific apparatus, electrical and mechanical in the department of physics in the Gymnasium. He claimed to have acquired a facility of visualizing experiments and calculations prior to performing them. Everyday he used to transport himself through the air to distant regions without understanding how he did it. In the second year at the Gymnasium he became obsessed with the idea of producing continuous motion. Under the stimulating influence of his Professor in Physics he became intensely interested in electricity. A device in the shape of a freely rotatable bulb, with tinfoil coatings was made to spin rapidly when connected to a static machine. Finally his endeavors crystallized in an

invention which was to enable him to achieve what no other mortal was thought to have ever attempted. Imagine a cylinder freely rotatable on two bearings and partly surrounded by a fitting rectangular trough. Occasionally the river would rise and drive an army of rats into the buildings, devouring everything even bundles of paprika. These pests were a welcome diversion, and he spent much time thinning the ranks by all sorts of means, which won him the unenviable distinction of rat-catcher in the community. He learned that cholera was raging in a particular district which usually visited the country in intervals of from fifteen to twenty years. He thought that the people were ignorant because they thought that the deadly agents were transmitted through the air and filled it with pungent odors and smoke. In the meantime they drank the infected water and died in heaps. “You will go to the best technical institution in the world to study engineering” he was told. A heavy weight was lifted from his mind and he reluctantly consented. For most of the vacation term he roamed the mountains, loaded with a bundle of books, and this contact with nature made him stronger in body and in mind. Visions would come to him but his knowledge of principle was very limited. At the termination of his vacation, he was sent to the Polytechnic School in Gratz, Styria. That was the moment he had eagerly awaited, and he began his studies in calculus and experimental physics, with the intent of succeeding. In the second year of his studies they received a Gramme dynamo from Paris, having the horseshoe form of a laminated field magnet, and a wire wound armature with a commutator. It was wired up and various effects of the currents were demonstrated. Sometimes while running the machine as a motor, the brushes gave trouble, sparking badly, and he observed that it might be possible to run the motor without these appliances. It would be the equivalent to converting a steady pulling force, like that of gravity, into a rotary effort. He pondered, that people undoubtedly have

certain finer fibers that enable them to perceive truths when logical deductions and other willful efforts of the brain are futile. He soon became convinced that he could undertake the task with all the fire and boundless confidence of youth. The wave of the American telephone had just reached the European continent and the system was installed in Budapest, Hungary. He thought of applying for an opportunity with the company, since a friend of the family was the head of the enterprise. It was here that he began to suffer the complete breakdown of the nerves, and what he reported experiencing during this period surpasses all belief. His sight and hearing were always extraordinary. He was able to discern objects in the distance when others saw no trace of them. Several times during his youth he had saved others houses from fire by hearing the faint crackling sounds which did not disturb their sleep and calling help for them. In 1899, when he was conducting experiments in Colorado, he was able to hear very distinctly thunderclaps at a distance of 550 miles. In Budapest he could hear the ticking of a watch with three rooms between him and the time-piece. The roaring noises from near and far produced the effect of spoken words which he said would have frightened him had he not been able to resolve them into their accidental components. When he passed under a bridge or other structure he experienced strange feelings. In the dark he had the sense of a bat and could detect the presence of an object at a distance of twelve feet by a peculiar sensation. Occasionally he experienced twitching and tremors which were more difficult to bear. Despite all this he had a powerful desire to live and continue to work. Could anyone believe that such a hopeless physical human could be transformed into a man able to work thirty-eight years almost without interruption.

Warrencliffe Tower

The Discovery of the Tesla Coil and Transformer.

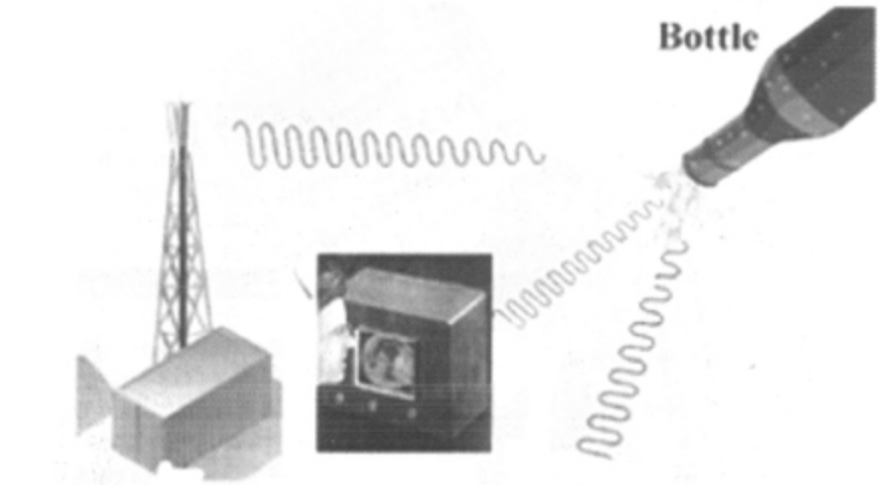
Few inventions have ever caused such a sensation like this one which culminated in the only man-made lightning thought ever produced. From the spectacular levitating stunts on stage and the high-frequency ‘violet’ ray machine in your home; all use the Tesla coils in one form or another. The Tesla coil is the key to wireless transmission, without it wireless transmission would not be possible. The oscillating transformer, the spark-gap, and the condenser – which is a Tesla coil, are all children of Tesla’s fertile brain. During the time Tesla was devising new devices, he said he was enjoying a mental state of euphoria, unlike he had ever known in his life. The description of devices came in an uninterrupted stream, and the only difficulty was to hold them fast. In a matter of a few months he developed all

types of motors, that presented a fascinating sight to the mind's eye when they were running. Soon after he accepted a draftsman position in the Central Telegraph office of the Hungarian Government. While employed with the telephone company, he perfected a telephone repeater or amplifier, and was offered and accepted a position in Paris. In Paris the magic city produced a very deep impression on his mind. When asked how he was getting along in this new sphere he replied "the last twenty-nine days of the month are the toughest". Every morning, regardless of the weather, he would wander from where he resided to a bathing house on the Seine, plunge into the water, loop the circuit twenty-seven times and then walk an hour to reach Ivry, where the Company's factory was located. Back at the office he enjoyed a woodchopper's breakfast half-past seven o'clock and eagerly await the lunch hour, while cracking nuts for the manager, who was an intimate friend and assistant of Edison. He came in contact with other Americans and soon gained their friendship, and then decided to try his luck in the Land of Golden Promise. During the voyage, he spent most of his time sitting at the stern of the ship watching for an opportunity to save somebody from drowning. In the Arabian tales he had read how a genii transported people into a land of dreams to live delightful adventures. Shortly after arriving in America he met Edison and within a few weeks he won his confidence and a new career began. For nearly a year his regular hours were from 10:30 A.M. until 5 o'clock, the next morning, without a days exception. Edison said to him "I have had many hard-working assistants, but you take the cake." The reward came in April 1887, when the Tesla Electric Company was organized, providing a laboratory and facilities for his work. In 1856 Lord Kelvin had exposed the theory of the condenser discharge, without practical application of that important knowledge. Tesla understood the possibilities of this announcement and began to develop an induction apparatus on this principle.

His progress was very rapid and on May 20, 1891 Tesla's revolutionary invention was exhibited to the American Institute of Electrical Engineers. This new invention made it possible to generate automatically damped or undamped oscillations of any desired frequency of perfectly constantly period. This invention utilized a source of electricity to charge a coil. When the difference of potential at the terminals of the coil reach a predetermined value, an air-gap is bridged, permitting the accumulated energy to be discharged through a circuit under resonant conditions, this resulting in a long series of isochronous impulses. These are either used directly or converted to any desired volume or pressure by means of a second circuit linked to the first and tuned to the same. The laws governing this apparatus are very much like that governing the conversion of mechanical energy with regards to the work that is done. Since his early announcement of the invention Tesla's coil came into universal use and revolutionized many departments. When in 1900 he obtained a powerful discharge of 100 feet and flashed a current around the globe, he was reminded of the first tiny sparks he had observed in his Grand Street laboratory, and was thrilled by the sensations akin to those he experienced when he discovered the *rotating magnetic field.*

Tesla’s Big Eye for Remote Viewing.

Nikola Tesla planned to utilize endothermic scalar interferometry to produce what he called his “big eye to see at a distance” or the “magnifying transmitter”. The beams are ‘scanned’ from side to side and a small amount of energy is extracted from the distant target. Thus the receiver produces a representation of the energy extracted from various locations within the distant endothermic zone, displaying the received signals on an appropriate screen.



Scalar Interferometer
Transverse Wave interference

Tesla's "Big Eye" for Remote Viewing

Can be focused to a specific depth
in the earth, the ocean or inside an enclosure.

Scalar Interferometer

The Roger’s Communications System

In 1904, during Army maneuvers in California, the U.S. signal corps discovered that it was possible to send and receive messages using live trees as antennas. By merely driving metallic spikes into a tree trunk a few feet above the ground and connecting wire from the radio to the spike, messages come in very clear. Radio communication was established between trees, at a distance of more than 3 miles. The higher the tree the better the results. This system proved invaluable during World War 1, when communication was required without the use of conspicuous wire. Right under the German’s noses, who never suspected innocent-looking trees of being the carriers of priceless information.

In the March 1919 issue of *Electrical Experimenter,* an article described “America’s Greatest War Invention”. The “Roger’s Underground Wireless” was described as the greatest American war achievement in radiosignaling systems. The Rogers invention was developed in Maryland for the Navy and is of tremendous importance and revolutionizes our previous ideas on wireless to an extent never dreamed of before. The Rogers system communicated secretly to expeditionary HQ overseas during WW1, and was declassified in 1919.

The Roger’s system relates to the sending and receiving of electrical impulses to a distance primarily for the purpose of conveying intelligence. Roger’s team discovered that signals can be sent and received with great facility by the employment of wires beneath the surface of the earth but insulated therefrom, and extending in direction substantially parallel to the earth’s surface. A detector of any type may be employed, preferably an audion, however a telephone may be used, instruments for electromagnetic waves connected

between said antenna. The antenna extends in a direction substantially horizontal, and for instance a plurality of antennas in three opposite directions dividing a circle equally into a “mercedes”. In order to obtain the maximum efficiency it is desirable to have the antenna disposed in a line at right angles to have the wave fronts The sending and receiving instruments could be under the surface of the ground in suitable chambers, trences or in caves. “Since such applications of the invention are obvious it is thought unnecessary to illustrate them”. The antenna is mounted within a conduit of pipe or insulated coaxial cable may be used. The cooperation of the antenna with a ground connection or a second antenna is desirable for proper transmission, thus the earth’s surface cooperates with the latter in sending and receiving oscillations. This arrangement is described fully in Roger’s patent No 1,315,862 file September 9, 1919. Wonderful things have been accomplished without departing from the spirit of the Rogers underground system, chief of which is the total elimination of static and the increase of the loudness of the received signal will in practice often be 5000 times the usual strength, and the directional effects obtained are excellent. A radio conductor of great length may be employed beneath the surface of the earth without necessitating a corresponding amount of trench work or other labor for placing the conductor beneath the surface. During the 1950’s, the Soviets took an interest in buried antennas for missile command and control purposes. Satisfied with the survivability characteristics, they proliferated their major command and control systems with buried antennas. In 1958 extremely low frequency (ELF) was thought to be able to provide reliable and survivable command and control communications to globally deployed submarines from a single transmitter located within the United States. Hardening and non-dependence on overseas basing has spurred Navy to continue efforts on buried and near earth

antennas though Project Sanguine and more recent developments. In 1979, a Tesla coil generator was scaled to inject an 80 Amp current into the lakeside, swampy soil in and around a Utah Lake. Simultaneous, in-phase signals were transmitted over the water and measured at various location both above the ground with monopole antennas and below the water's surface. A standing wave was recorded on the opposite lake shore, six miles away. Buried antenna technology is emerging at the same time that nuclear hardening and EMP protection are becoming more difficult and expensive. With an increasing awareness of the vulnerability of satellite communication systems the technology is being documented under the HAT program. Submerged and near earth antennas offer a variety of unique advantages when combined with proper radio systems currently available. The modern submerged and near earth antenna technology offers enduring, terrorist proof, secure, economical communication systems that now is being considered to be utilized independently of atmospheric changes and the ability to frequency hop at high rates.

Method And Apparatus For Producing High Frequency Occillating Currents

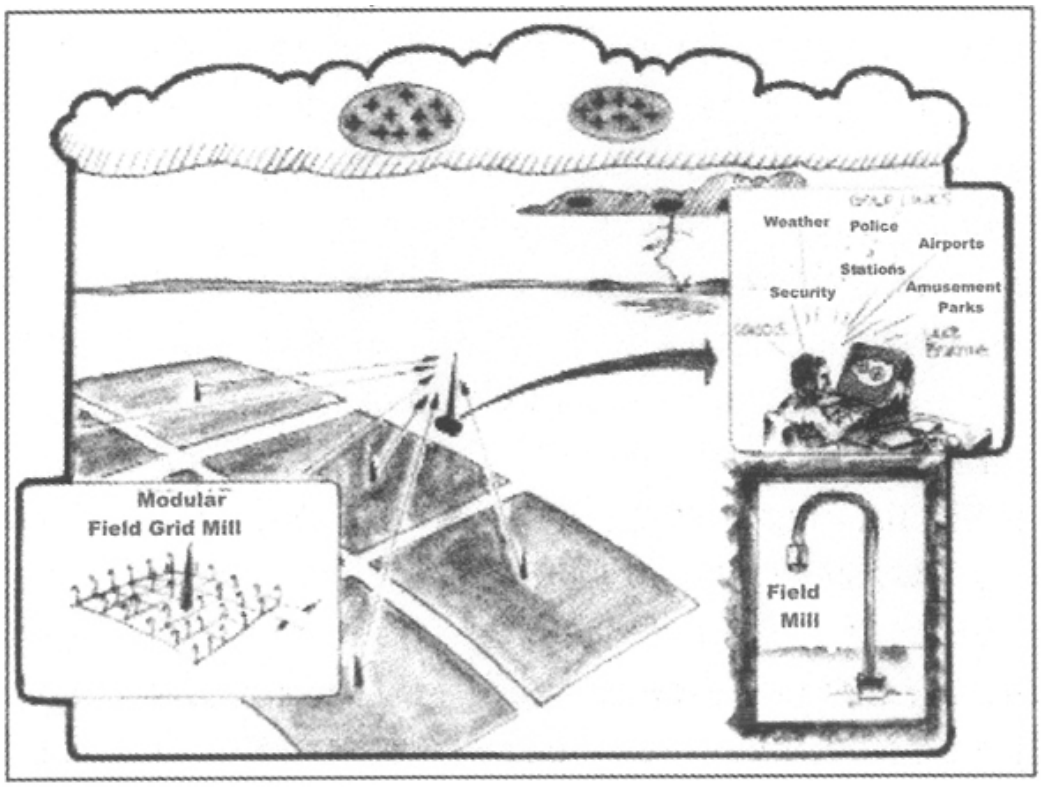
Roger's invention (U.S.Patent 958,829) describes instrumentalities employed for the purpose of what has been previously describes as the **'singing arc'** to which his invention is only remotely connected. This apparatus utilizes water pumped through a jet to produce high frequency oscillating currents. When the key is closed and water pressure is turned on in the jet, issuing through the orifice, the jet supplies a relative conductivity and resistance of an unbalanced nature to a current between electrodes, and thus produce such rapid interruptions as to set up in the spark gap wave oscillations of enormous frequency well adapted for wireless transmission. The greater the water pressure in

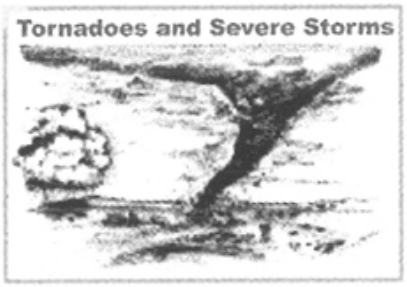
the jet the higher the frequency. The jet also serves to keep the electrodes cool.

Various radiosignaling systems described by Roger's in his patents consist of instruments for magnetic signaling, consisting of coils or spirals wound upon suitable frames. These coils are placed beneath the earth's surface, by being lowered into a well or other depression in the earth. The coil is preferable arranged in a vertical plane, and is placed at right angles to the wave fronts of the electromagnetic waves to be radiated or received, in order to obtain the maximum effect. (U.S. Patent 1,315,862)

(High Frequency Tactical Antennas Go Low Profile, Freeman G. Lee, p. 29, Signal Nov 1986) (Roger's patent No 1,315,862)

Community Wide Lightning Warning





Detection and Tracking

The current detection and tracking technology is mainly devoted to sensor development and integration into novel detection systems, primarily in the extremely low frequency (ELF) regime, including thunderstorm and lightning and tracking, and personnel detection for security purposes. Inexpensive workstation interfaced with sensor array that are capable of detecting personnel movement around installation perimeters using very inexpensive detectors and high-impedance amplifiers coupled to a data acquisition

system. The workstations perform real-time and display an easy to interpret human machine-interface, designed in conjunction with individual needs.

Extreme Low Frequency Magnetic Fields. A Psychotronic Warfare Possibility?

The ELF frequency range is critically important because of its value in providing a way to communicate with submerged submarines. The mechanical frequencies of sound waves are in the ELF range, similarly are the magnetic frequencies of the Schumann resonance (colloquially, perhaps, the natural frequency of the earth as a resonant body). The high electrical conductivity of sea water signals are attenuated rapidly as they propagate downward through it. In effect, the sea water “hides” the submarine from detection while simultaneously preventing it from communicating with the outside world. At ELF, on the other hand, the difficulties of communication are overcome. The lower the frequency, the more deeply a signal can be received in sea water. Broadcasts using this mode provide the primary link between difficult communication ties. ELF fields of 6.67, to 6.26 Hz produce symptoms of confusion, anxiety, depression, tension, fear, nausea, cholingergia, extended reaction times, hemispheric EEG desynchronization, and other vegetating disturbances. Magnetic oscillations of 7.83 and 9 Hz produce anxiety-relieving and stress-reducing effects mimicking some meditative states. The Schumann resonance can effect moods, consciousness and health cycles of all forms of life. Frequencies in the range may well be the carrier energy involve in mind-control, phychotronics, and related paranormal and historical and documented phenomena. Microwave signals can be modulated in the ELF region of the spectrum to produce similar effects. It can be speculated ELF

signals can be a powerful potential weapon with global capabilities in psycho-physiological warfare. (The wavelength of an 8 Hz signal is 22, 159 miles). In 1952 the physicist W.O. Schumann postulated mathematically that our earth and ionosphere constructed a cavity wave-guide whose physical constants and magnetic field would oscillate at a resonant frequency identical to the range of human behavior. These resonant frequencies could similarly be affected by other planets in the universe interaction with our earth's geomagnetic cycles. Beginning in July 1978 the Soviets began transmitting electromagnetic signals over broad frequency ranges – from 5 to 15 Hz – of sufficient power to disrupt radio communication globally. These frequencies fall precisely within the psychoactive range of neuronal excitation. Danish monitoring stations reported detecting these signals on the order of 40 megawatts. The transmitters were presumably located at Riga and Gomel. The transmissions disrupted lawful radio communications throughout the world, and were protested by many nations. The Soviets did not provide an adequate explanation of the purpose of these tests. The Canadian Department of Transport monitoring sources reported alarming mood-alterations in certain areas of eastern Canada, such as the city of Timmins, Ontario, which the RCMP believe were linked to the Soviet transmissions. Besides modifying the electrical ionic and stratospheric equilibrium weather-motion factors, the signals fell precisely within windows known to be psychoactive. Both theory and laboratory tests prove that magnetic (H-wave) shielding is impossible at these psycho-active frequencies, even with highly sophisticated multiple iron or mu-metal shielding. "Introducing psychotronic signals into mass population or audiences can influence or control the behavior of large numbers of persons. Psychotronic signals and the patterns they carry can be, and are modulated upon electromagnetic carriers and can be targeted against specific groups or

people. The weapon implications are enormous. Raw emotions such as sheer terror of panic may be transmitted, informational content (thoughts and ideas) and speech evoking can be impressed inside the brain itself. Specific areas and functions of the brain can be targeted. If the originators keep the effects rather gentle, the entire population and the government can be controlled without notice. More frightening potential than the mind of man has ever seen. Thus true unwitting “robot” actions and emotions can be engendered in masses of human beings”.

Complex signals such as the sounds on a telephone, can be electrically processed. First the signal is passed into a section that clip everything into a series of square waves, remarkably analogous to the sort of clipped waves, that have been confirmed as the information carriers of the human brain. Next the square waves are differentiated, yielding a series of sharp spikes (note that these spikes retain the pulse-time content of the clipped signal). Theses spikes are again differentiated, and when introduced with psychotronic signal directly “pump the brain” and reproduce sound and information directly in the brain and mind systems without the recipients awareness. Typically the signals may be found on say, sixteen different carriers between 10 and 20 megahertz. Twelve of the carriers appear normal, with normal sidebands, and the other four may have the carrier and both sidebands suppressed but still show the biologically significant modulation (for example, 10 Hertz). On all sixteen channels a strong 10 Hertz modulation may appear, all perfectly time synchronized and in phase channel-to-channel. The received signal from one of these carriers may be twenty-five to thirty times as strong as the earth’s background magnetic field, which is oscillating at approximately 7.0 to 7.5 hertz. Other complex modulation frequencies, many of them changing, are present on various channels. The signals may have direct application against

strategic targets other than personnel. Scalar scanning devices of sufficient precision have been developed allowing major software residing in a chip, a computer, a disk to be read from a distance. With scalar EM methods, the ordinary software “guards” are totally ineffective. Almost every electronic system presently or developing, is totally vulnerably to scalar EM weaponry. The scalar reader could simply read off the software directly as the disk or device goes about its normal business. In effect, the instrumentation and the personnel that is used to detect scalar weapons can be directly controlled with the scalar weapons and the results controlled. The technological capacity that the intelligence community utilizes on the people and the government could enable it to impose total tyranny, and there is no way to fight back, because the most careful effort to combine together in resistance to the government, no matter how privately it was done, is within the reach of the intelligence community to know. Such is the capability of this technology. Ways may be developed that allow every citizens emotions and inserted thoughts and the spoken word to be monitored by computers all the time. It results in people being employed like human guinea-pigs, (see page 221 Ferde-Lance) “then they can simply record the desired signals from human guinea-pigs, using scalar technology.. they can design those signals and add them onto the carriers.. specific areas of the brain can be targeted.”)

(Ferde-Lance *A briefing on Scalar Electromagnetic Weapons* Tom Bearden ☹ Pages 61, 221)

(“Apparatus and method for the transfer of information by means of a curl-free magnetic vector potential”. U.S. Patent No. 4,429,280 Jan 31, 1984) Raymond C. Gelinas).

Time Magazine August 21, 1995).

((Cyber War “The U.S. rushes to turn computer into intercontinental weapons of destruction”.

“You Will Read This Story” (Soviet Mind Control WAKO Texas) Newsweek August 22, 1994).

(“Soviet Research and Development in the Field of Direction and Control of Human Behavior”
Richard Helms, Memorandum CD 1131 Unclassified).

(“Extreme Low Frequency Magnetic Fields Entrainment: A Psychotronic Warfare Possibility?” Association for Humanistic Psychology Newsletter, April 1978).

(My Inventions, Nikola Tesla, Tesla Museum in Belgrade 1981)

A Machine for Capsizing the Mind

In January 1918, a group calling itself the Thule Society was formed in Munich, apparently to study the occult significance of runic characters, believed to have magical powers. The Soviet Union turned towards experiments and a greater revolution, the revolution in the psychic personality of man. Investigations in this area were initiated in Russia back in 1919. The human thought process is accompanied by phenomena of an electromagnetic nature, and the emission of electromagnetic waves capable of producing an influence over long distance were studied by Kazhinskly. Three years late (1922), following a number of experiments in the department of physics of the Agricultural Academy in Moscow, Kazhinskly succeeded in finding in isolated preparations of the nervous system certain nerve elements resembling solenoid loops and paired capacitor pates similar to the well-known elements of the closed Thomsen oscillation circuit, a vibrator of discrete currents and electromagnetic waves. Further investigation of the structure of the organ of hearing led to various theories of biological radio communication and a heretofore unknown stimulent reaching the brain. These experiments in the U.S.S.R. and abroad have proved the possibility of transmitting preconceived mental information over distance, and has removed the cloak of mystery on this problem and placed it in the field of exact science. In 1875 the Russian scientist D.I. Mendeleyev wrote about these phenomena that were considered mediumistic in nature: They should not be ignored instead thoroughly examined, that is we must find out which of their characters can be explained by known natural phenomena. After such an investigation, these phenomena will lose their aura of mystery, to which so many

subscribe, and there will be no room for mysticism. The technical superiority of the machine, has since set in motion a convergence between itself and man. Such an invasion of man's private world by automa has provoked a massive renovation of mankind. Psychotronics is the theory of interactions over distance. The psychotronic branch of knowledge possesses today, as voluminous a literature as the entirely existing in other branches. The future will see both mechanical and human robots. The golem, which in sixteenth-century Yiddish folklore was envisaged as a beneficent servant of man, has showed up in our time as the "body as machine" in various robots, androids, and cyborgs, "mechanical creatures". The "leitmotiv", a popular concept in science fiction, of human civilization being threatened by a robot takeover, symbolizes a widespread fear of the automation of man himself controlled by a kind of internalized program in an age of simulation and automatization of life. In the future, the man-machine idea will occupy a strategic position in various disciplines, in neurophysiology, in technology and the mechanical maximation of our limited powers, and the survival of man's authentic self.

In 1957 Sargent wrote a book "The Conditional Reflex" on Pavlov and the Soviet Union. Their only mission was to protect the Soviet people against the unwanted uncontrolled impulses from the decadent capitalistic world. Continual cooperation behind the "Iron Curtain" on the railways along the borders between Russia and China continued. According to Yugoslavian sources there would still be 300 million Chinese surviving a nuclear world war. In the meantime Kruschev and Mao Tse-Tung hurl thunderbolts of dogma and heresy at each other, and give life to a quarrel that began more than 2,000 years ago.

(Biological Radio Communication, B.B. Kazhinskly*)*

Cardinal Mindszenty

Mindszenty’s Strange Confession

It is generally believed that the will power and reasoning power of Cardianal Mindszenty was destroyed by Russian Brain Waves in Hungary. The world on this side of the Iron Curtain wondered what tortures or methods exist that could possibly bring about a complete change of personality. Incredible though it may seem, the Communists have in fact discovered psychotronic processes by which a man’s soul can be torn apart and put back together again. The fact that man’s spiritual personality can be made to disintegrate while his outward appearance remain intact was demonstrated during the trial of Valentine Arany. Arany was

a Hungarian engineer with a character as hard as the steel he worked with Arany was brought to trial in March 1947, and charged by the communists with conspiracy. At first the Hungarian's had forced Arany to stand for 120 hours facing a whitewashed wall lighted brilliantly by glaring lights; during these five days he received no food and was never permitted to sit down or sleep. Teams of inquisitioners relieved each other in continuous questioning. It seemed to them that after 120 hours, his spirit was completely broken. Now susceptible to Russian Brain Waves he was once again brought into the courtroom and confessed to all the charges but displayed repentance and an inconceivable desire to atone. Meanwhile, unknown to anyone in Hungary, Dominick Szentivanyi was wasting away, a career diplomat accused of the same 'conspiracy' that involved Arany. A man broken in soul and mind appeared at the trial, unable to deliver the sensational 'confession' that had been drilled into him. He had become insane. Cardinal Mindszenty was also 'prepared' and we saw in his trial the perfection of a new horrible science on inquisition. Moscow and Budapest knew that the Cardinal Mindszenty case would attract world attention. The prelate had been 'prepared' in such a fashion that he would first appear at the trial as himself, showing just enough repentance to be believed. Next the 'Russian Brain Waves' broke the cardinal's will power, and attacked his soul leaving everyone in suspense for a while, then putting his soul back together according to a perfect arithmetical formula to fit a precise political design.

'I ask for peace for my church, my love for which I brought here, too for the Hungarian state toward which I showed my obedience, and peace for my own soul...'.

New Kind of Spy Warfare.

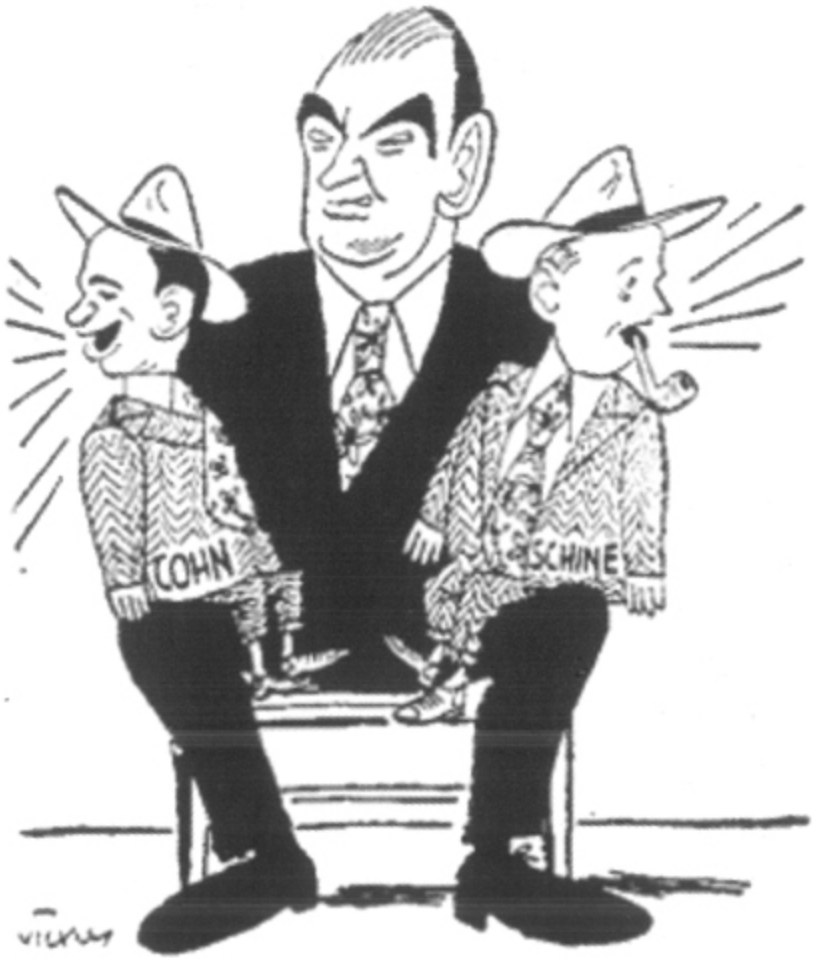
A new form of psychological warfare flared between the Soviet Union and the U.S. and their constant tug of war, both sides were employing the unlikeliest of weapons, book publishing. Just enough is revealed to cause a great deal of work to track down the sources, if indeed they exist. However no intelligence service can afford to ignore these “plants”. It was clear to intelligence agencies that these could not be expected to reveal any real secrets, however they looked forward to finding at least some leads in them. Even if it takes them to the coal’s which were by now quite cold. One such book represented a new school of literature and a new kind of weapon in the cold war. It had to be countered. In a passage that certainly had the ring of truth he say’s that the public is due for a refresher course in the history. Someone may always ask what am I doing. At home, he added, ”at least I have a hiding place at my desk”. Was this hiding place big enough to hold the manuscript of what turned out to be a sizeable book? Virtually every page of the manuscript that we now see on the shelf in book form has presumably already been read by every intelligence agency in the world. What is the name of this book ‘The book’. He is likely to have used precious material that has been planted here and there and scattered throughout the universe where only one man could find it. The idea is to determine which information is genuine, and which information comes from him. It is now the accumulation of evidence scattered throughout the book that makes it possible to support certain claims. The book has now been smuggled out of Europe and arrived in Washington, where it is currently in the process of moving mountains, and being discussed by Western government officials. Neither of the intelligence appears to have hired its best talents to their literary pursuits, in due course, they will achieve a standard high enough to produce books that are amusing and informative and foolproof. We will no longer be in a position to tell that they have been produced by the rival intelligence services.

It is enough to make professors of literature give up in despair, or perhaps apply to join one of the intelligence agencies.

There must have been a time when the keen eyes of Communism, ranging over the West and non-Communist Asia, were caught by a stunning insight that revealed ’those who are not against us are for us’. In other words for Communism the problem was to convert ’internationalism’ or ’neutralism’ from negative to positive forces, dividing the West’s will to resist Communism. The answer was to refine the cruder forms of Communist aggression, into subtler forms of balance of power which necessity made possible. This is the chief point and thrust of the tactics set forth at the 20th Congress. While Secretary of the Communist party Krushchev speech runs several thousand words in this direction.

During the cold war the Soviets engaged in electronic reconnaissance. They sent TU-16 Badgers day after day against the American radar picket fence in Canada’s far north called DEW (Distant Early Warning) Line. They were more dependant however upon their trawlers. Russia’s fishing fleet comprised of 3,000 ships, would regularly ply the water of the North Atlantic and almost 90 of these during some major American exercises in 1961 were getting their best catch from the airwaves. The Russian trawlers would roam the coast off Cape Kennedy tracking communications and guidance radars that must be checked before missile firings. The trawlers sailed off the New England coast and near the Army signal center at Fort Monmouth, New Jersey. Their appearance off the New England coast once caused a pause in the testing of experimental radar at M.I.T.’s Lincoln Laboratory in Lexington, Massachusetts. Electronic countermeasures of E.C.C.M.’s are so intimately interwined and mutually reliant that the whole field of electronic intelligence and security is

usually considered under the general heading of ‘electronic warfare’, or what Winston Churchill has termed ‘Wizard War’. Years ago, in the halls of science, complaints could be heard that Soviet experiments regarding mind control could not be duplicated due to insufficient detail in their scientific literature, according to one official, 75 % of the U.S. papers on the subject carried insufficient parameters for duplication. Scientist even questioned, with McCarthy like sentiments, whether the Soviets were attempting to frighten or misinform with scientific reporting, or more likely that they were not informed. There was equally strong interest in the study of such effects in the military and intelligence community of the Soviets and the U.S., and developing exploitable resources – an interest that continues unabated today.



Archvillain in virtually every European's book on America is Senator Joe McCarthy. This cartoon ridicules his investigators of American personnel in Europe likened to ventriloquist's puppets.

According to Executive Intelligence Review such a behavioral control project was begun in the 1950's, coordinated by the British psychological warfare unit called Tavistock Institute, with the Scottish Rite Masons, the Central intelligence Agency, and other British, U.S. and Canadian, and United Nations agencies. This interest has metamorphosised into development of invisible weapons of controlling psychological and behavioral processes. In 1976, the Defense intelligence agency (DIA) released a report in which they attributed the results of Dr. Frey's studies in

auditory effects and applications to the Soviets. The DIA is allowed to use “mirror imaging” and in their reports, and respectively attribute ones own motives and weapon capabilities to the other side, in this case the Soviets. It follows that there is nothing to prevent them from releasing a report prepared in this manner.

Soviet Research and Development in the Field of Direction and Control of Human Behavior.

The Warren Commission was exploring the Manchurian candidate theory and though the testimony presented in the following, it was disclosed that there was no evidence that the breakthroughs and techniques in controlling particular behavior gained by “Soviet” practices, were possibly no better than those available to the West. The following quotations are from the Warren Commission documents declassified in 1984:

“The outstanding feature, in addition to the interdisciplinary approach, is a new concern for mathematical approaches to an understanding of behavior. Particular notable are attempts to use modern information theory, automata theory, and feedback concepts in interpreting the mechanism by which the “second signal system,” i.e., speech and associated phenomena, affect human behavior. Implied by this “second signal system,” using information inputs as causative agents, rather that chemical agents, electrodes or more exotic techniques applicable, perhaps, to individuals rather than groups. This new trend, observed in the early Post-Stalin Period, continues. By 1960 the word “cybernetics” was used by the Soviets to designate this new trend. This new science is considered by some as the key to understanding the human brain and the product of its functioning— psychic activity and personality—to the development of means of controlling it and to ways for molding the character of the “New Communist Man”. As one Soviet author puts it; Cybernetics can be used in “molding

of a child's character, the incubation of knowledge and techniques, the amassing of experience, the establishment of social behavioral patterns..... all functions which can be summarized as 'control' of the growth process of the individual." students of particular disciplines in the USSR, such as psychologist and social scientists, also support the general cybernetic trend. 2/ (Blanked by CIA). "In summary, therefore, there is no evidence that the Soviets have any techniques or agents capable of producing particular behavioral patterns which are not available in the West. Current research indicates that the Soviets are attempting to develop a technology for controlling the development of behavioral patterns among the citizenry of the USSR in accordance with politically determined requirements of the system. Furthermore the same technology can be applied to more sophisticated approaches to the "coding of information for transmittal to population targets in the "battle for the minds of men." Some of the more esoteric techniques such as ESP or, as the Soviets call it, "biological radiocommunication", and psychogenic agents such as LSD. Are receiving some overt attention with, possibly, applications in mind for individual behavior control under clandestine conditions. However, we require more information than is currently available in order to establish or disprove planned or actual applications of various methodologies by Soviet scientists to the control of actions of articular individuals."

(Declassified - Richard Helms - Report to Warren Commission)

Soviets Used Top-Secret 'Psychotronic' Weapons

A top secret program of 'psychotronic' brainwashing techniques developed by the KGB and the ministry surfaced

in a report in the Moscow Times in 1995. There is strong evidence that a ‘psychotronic’ warfare program did exist during the Soviet period. The techniques included deliberating high frequency radio waves, hypnotic computer-scrambled sounds and mind bending electromagnetic fields. An environmental and civil liberties group claiming a membership of 500 people in Moscow established an association called “Victims of Psychotronic Experimentation”, and filed damages claims against the Federal Security Service and the government.

Because many of the victims are considered psychologically disturbed, there was a problem of verification. The report claims that the health ministry and the FSB are doing mind control experiments on over a million innocent people. A former member of Zelenograd’s local council wears a lead helmet in bed to protect herself against the signals that she says the government beams into her flat. “We are fighting to prove to the authorities that we are not mad.” The State Duma took the matter seriously enough to draft a law on “security of the individual,” which includes regulation of pseudo-religious sects, and imposing state controls on ‘psychotronic weaponry’ in private hands. “The legislation brings Russia into line with Bulgaria, the only other country to outlaw such equipment specifically”. When a religious sect in their Texas compound threatened to commit mass suicide, the FBI its counterterrorism experts consulted with a Russian expert in Moscow. The plan they were considering included using technology that could pipe subliminal messages form sect members families through the telephone lines into the compound. For the sect leader and self announced prophet, the FBI had in mind a special voice, God. The voice of God would implant the notion of surrender in the recipient minds without their knowing it. A subliminal perception that would receive a powerful motivational jolt to the subconscious, surrender to the

recipients minds without them knowing it. We don't hypnotize the patients, "We just emphasize a certain aspect of their brain". The FBI backed out of the Waco plan, "in the netherworld of espionage and psychological warfare, there is a longstanding and understandable fascination with methods – however weird – to penetrate minds on the other side. For years, there have been rumors that the Soviets were actively developing psychological weapons." In the wrong hands the techniques could be used to make people say, or to push them into some violent acts. It was the intent that the subliminal subversion would be able to make them go away.

In a report to the Attorney General of the United States discussing information concerning the scenario at Waco Texas, the subject of mind control is evaluated. The intelligence community has apparently been able to produce "Manchurian candidate type "wind-up" robots ever since the late 1940's using methods reminiscent of brainwashing in Korea. One of the key features of mind control programming is the fact that critical segments of the subject's memory, including most of all the programming experience itself, are suppressed and forgotten, with new thoughts implanted into the subject's unconscious mind in their place. The majority of the memory and conscious alteration is done at the subconscious or unconscious level. Once the programming has been completed, an altered conscious and memory blocks are installed into the subject's mind to make it next to impossible for him to ever recover from these behavior altering experiences. Therefore since he is unable to recall the circumstances or events - he is virtually helpless to confront or overcome the programming that he has been subjected to. He is therefore at the mercy of the programmers, and they have no mercy. Then, at some predetermined time in the future upon receiving a specific combination of secret signals, anyone will automatically

execute whatever behavior he has been pre-programmed to do - nearly always some violent or criminal act against a person or group that has been targeted. This type of mind-control programming may include one or several pre-programmed ‘self-destruct’ responses, a trancelike robotic response that would make ‘suicide’ meaningless since he would be consciously aware of what he he was doing or in a rage. In this way he would not be availble for questioning by authorities who might uncover the truth about his secret programming, and what tasks he had been programmed to execute while in a trance-like robotic state. These responses would typically be triggered once the predetermined mission is completed in this way seemingly protecting the Agency itself, from any exposure, liability, or accountability and termed ‘plausible deniability’. Such investigative early work reportedly has been investigated at the University of Pensylvania Dermatology Department, and the Holmsberg State Penitentiary in Pensylvania, and at military installations.

(WACO - U.S. Goverrnment Out Of Control - Attorney General U.S.A. 12 May 1995)

(You Will Read This Story, Mind Dr. Smirnov’s Power of Suggestion, Newsweek August 22 1994)

(The Moscow Times July 11, 1995)

The Tools: R.H.I.C. and E.D.O.M.

The public is generally made aware of the development of advanced scientific weapons years after their invention. This time lag between the development and announcement is usually due to secrecy. A case in point would be the tools R.H.I.C. and E.D.O.M. described by Lincoln Lawrence in his book *'Were We Controlled'* in 1967. R.H.I.C is the tool for individual control of human behavior. No agency callous enough to play with such a toy could resist the challenge to try to reach the obvious goals of this kind of experimentation and influence important events utilizing radio waves. "Radio-Hypnotic Intracerebral Control" and "Electronic Dissolution of Memory" are the names of techniques employed to control the mind. One of the first announcements of this type of research was published in 1903 in Russia by Vladimir M. Bekhterev. A seven volume report called the "Foundations of the Theory of the Functions of the Brain" presented some of the earliest conclusions on methods of stimulating the brain. Later the groundwork for the field of radio control of the brain was laid when E.L. Chaffee and R.U. Light published a paper called "A Method for the Remote Control of Electrical Stimulation of the Nervous System". Other investigators who pioneered the use of radio and induction for control of the mind include Loucke (1934), Clark and Ward (1937), Fender (1937), Harris (1946-47), Gengerelli and Kallejian (1950), Mauro (1950), Verseano and French (1953), Greer and Rigle (1957), and most important of all, Jose M.R. Delgado in Madrid and New Haven. Another important work is described in detail in "Distant Evoked Responses to Single-Pulse Stimulation" by Bickford McDonald, Dodge and Svien (1963). The progress of research in this field is like an iceberg, most of it lies

beneath the surface. R.H.I.C. is a top secret toy of the "controllers" the techniques of E.S.B. is not. The date for the direction of the mind in absence of electrodes and using radio signals is 1934 – thirty years before Yale's announcement. Professor Vasiliev reports, that the famed Russian physiologist Tomashevsky carried out the first experiment with this subject at a distance under conditions where the subject was unaware that they was being subjected to this technology. One such experiment was conducted in a park at a distance... mental suggestion to go to sleep was complied with within a minute." Here was primitive R.H.I.C. in action more than a half century ago. R.H.I.C. is the ultra sophisticated application of control of the will by radio transmission. It is a recurring hypnotic state of mind entrainment re-induced automatically at intervals by the same radio-control. The subject is programmed to perform certain actions and maintain certain attitudes upon radio signal. The signal is practiced while the subjects mind is entrained and teaches him how to respond. Certain behavior therefore can be predicted and "played" over a period of days or even months. Re-introduction to the signals can be instituted to continue the control for an unlimited time. The development of R.H.I.C. began successfully over 50 years ago, but it is apparently not Russian or American in origin. The term E.D.O.M. surfaced long enough in 1956 to be noticed. Simply put, E.D.O.M enables the controlled to juggle with other men's sense of time. "It provides illusionary distortion of memory that destroys time orientation. For the execution of a crime (like the one in Dallas) or the execution of an organized tactic, E.D.O.M offers unbelievable new powers!" E.D.O.M, through the use of radio-waves and ultrasonic signal tones suddenly inhibit signal transfer and excitation from one cell to another. "It in effects blocks memory of the moment, which is our feeling of momentary time It *stops time* - for as long as it is placed in use! E.D.O.M could therefore be used for – lets

us say – a period of several minutes to make someone skip over those minutes without being aware of the passage of time"..."perception is merely a matter of the brain *suggesting* and *testing* various hypotheses about the information presented to it. A person's perception can be misleading if the visual cues are contradictory or if what is being observed is either *very strange* in itself or seen under totally alien circumstances..." An experiment was conducted in North Conway, New Hamshire, "Project Time Out" with the entire population of the town "cooperating" in one of the widest-scale psychological experiments ever conducted in connection with "time sense". All clocks were stopped, and wristwatches were handed in to the municipal building, radio broadcasts were stopped, and time stood still for about forty-five hours for everyone in North Conway. The school ran without time signals for classes, the noon whistle was stopped, and a survey conducted showed that the majority of the people felt lost. Other psychological reverberations included being a nervous wreck, uneasy and resorting to tranquilizers. One person reported that he felt like he was floating in mid-ocean without a compass. Project 'Time-Out' seemed to demonstrate that the United States was coming to an era of scientific manipulation of "time". During this time an article appeared on the front page of the *New York Times* professor of Psychology at the University of California Krech. The story of his speech was: MIND CONTROL COMING, SCIENTIST WARNS. Krech was quoted saying: "Let us not find ourselves in a position of being caught foolishly surprised, naively perplexed and touchingly full of publicly displayed guilt..".

(Were We Controlled? Lincoln Lawrence 1967 p.25)

Rocket Radio

“This place served as a physical receiving station for waves of psychic events that have been breaking upon this world since unrecorded time”.

The revival of the alternative non Freudian unconscious began in the 1950’s when its reconstruction under the auspices of artificial intelligence was one of the factors responsible for the timely decline of Behaviorism. Research into automatic aiming devices during the Second World War had shown that the control mechanism needed to pursue and destroy an unpredictably moving target required internal representation in which to register, update, and compute the relevant information. Although no one claimed that such an representation was conscious of its own deliberations, the necessity of such a mechanism gave credence to the notion of unconscious information processing and the cognitive revolution ensued as a result. Because of unilateral neglect, we are conscious of a relatively small proportion of what we know and that we are the unwitting beneficiaries of a mind that is, in a sense, only partly our own.

Since 1957 considerable American scientific forces have been working on the solution of the problem of transmission of thoughts. The largest American firms have created special laboratories to investigate this phenomena. An account based on French reports in the media mentions the use of ELF to communicate with a man on a submarine. In 1958 an unusual experiment was set up. One person was in the laboratory and the other on board the submarine “Nautilus,” two thousand miles away. Every day a strictly set time the person on shore transmitted 5 visual images to the

submarine, selected in random sequence by an automatic device. The person on the submarine deep under the water transferred the images that arose in his mind to paper. When the experiment was completed it turned out that the man in the submarine had received three fourths of the images mentally transmitted to him.

Washington D.C., October 21, 1976. An official permit had been granted for an attempt to raise the colossal Pentagon ten feet off the ground. Despite the permit, the many mystics, holy men, sorcerers, seers, shamans, madmen ect., were prevented from encircling the building completely, which sabotaged the machinery that might, just might have levitated the Pentagon. The cover story of the March 5, 1974, issue of Time magazine was ”Boom Times on the Psychic Frontier,” and boom times they seemed to be. Everywhere, in America, Russia, and Europe, the interest in psychic phenomena was proliferating research projects and articles on the topic. In Washington, the Defense Department’s Advanced Research Projects Agency, was assigned to investigate psychic phenomena at the Stanford Research Institute. The Gauquelins, working from the laboratoire d’etude des Relations entre Rhytmes Cosmiques et Psychophysio-logique at Strasbourg conducted statistical surveys on related subjects. The world began to witness a takeover of magic by science, a way of destruction of psychic blocks and mental hangups, a way of ”listening to thought” and releasing the power of the imagination. Effective intelligence relies on devices that can allow rapid and secret communication among allies and the remote surveillance of enemies, while at the same time hopefully preventing the same techniques being employed by others. An alarm system that can spot a leaping grasshopper and report troubles in a voice – which translates signals into English. The alarm system can be set-off by squirrels, rabbits and other small animals.

”Tilda used to pick up her ears when she heard the rabbits stirring beneath us in their burrows which my own sixth sense used to tingle with the inaudible music of the horns of elfland faintly blowing”

The power of the imagination to visualize and change the world has been validated as a scientific process, chiefly due to unparalleled development in communication and computer technology. A world of ‘virtual reality’ where the world is a network of invisible relationships mediated through telephones and the internet. We are beginning to appreciate fully some of the various resources arising from recent developments in modern science and technology. If we think of ‘virtual reality’ and the extraordinary production of effects by little known techniques, and in terms of deliberately trying to manipulate those effects, we may consider them being very prevalent in present-day culture. The entertainment industry, for instance, uses cutting-edge technology for the purpose of exciting, uplifting and transporting its audience into a world that can both imitate reality and move into the realm of pure imagination. Emphasis is on the developing of techniques and secret technologies that are harnessed by the defense industry whose principle goal is to achieve state security.

The Puzzle Palace

Inside the National Security Agency a heavy fog of secrecy and security permeates the air. Physically the NSA is protected by a moat of steel, high voltage electricity. One telecommunications engineer who formerly worked with the CIA’s communications research and development branch expressed his fear about the potential of the NSA to violate the privacy of citizens unmatched by any other agency.

Tons of electronic surveillance equipment at this moment are interconnected within our domestic and international common carrier telecommunications systems. Much more is under contract for installation. Possibly this equipment is humming away in a semi-quiescent state wherein at present “no citizen is targeted”; simply scanned. Common to all places are the small, gray, cone-shaped microwave antennas that dot city rooftops and shoot skyward from hills and fields, they have become as unseen as crocuses in spring-

time. It is this network of inverted tops, small saucershaped dishes, and cornucopia-like antennas that has transformed our domestic telecommunications from the wire to the wavelength... Spaced between twenty-five and thirty miles apart and in line of sight of each other, each of the antennas can transmit, receive, and relay many thousand simultaneous calls with the addition of the new single-band equipment. ”It is over such broadband microwave links, which blanket the country like an electronic net, that vast majority of long-distance telephone communications travel”. Others see a more sinister domestic microwave “tap”. A former CIA telecommunications engineer points with his index-finger on a microwave routing map to a circle area in greater Washington with the letters RCV, and just below the circle are three more letters: NSA. That circle is actually a large microwave tower with nine cones pointing in five directions. What makes the tower suspect is that it is tied into local telephone company circuits. The extremely broad-banded capability implies that they are scanning continuously, thousands of circuits all over the country. Referring to NSA’s SIGINT technology, a Senator concluded. “Such is the capability to monitor everything there would be no place to hide. The technological capacity that the intelligence community has given the government could enable it to impose total tyranny and there would be no way to fight back, because the most careful effort to combine together in resistance to the government, no matter how privately it was done, is within the reach of the government to know. Such is the capability of this technology..”

(The Puzzle Palace, James Bamford, p. 176, 1982)

The Electronic Surveillance Project

Information concerning directed–energy technologies began to appear in noteworthy publications in the United States. Indeed directed-energy technologies have evolved at such a rapid rate that they are being reported to be a “Final Solution” to crime at a classified conference sponsored by the Los Alamos National Laboratory, hosted by the John Hopkins Applied Physics, and supported by the American Defense Preparedness Association. This conference presented data concerning ELF/RF, acoustical and “psychotronic” systems and promoted them as tools for law enforcement.

“Microwave Harassment and Mind-Control Experimentation”, published in December 1992, published an overview of complaints received from individuals and noted that a global pattern of activity regarding mind-control experimentation and the so-called New World Order seemed to exist. The majority of the victims resided in the United States, and virtually identical complaints were received from England, Canada and Australia. These activities were ongoing on the European Continent, and the former Soviet Union. Induced auditory input, vicious overt harassment, attempted psychiatric, discrediting, and an extremely abusive array of externally-induced symptoms are common to this panoply of experiences. It has been reported that magnetic resonant imaging is part of a system by which all citizens can be monitored and tracked by sophisticated cybernetics. The Electronic Surveillance Project is dedicated to helping victims of such abuse to survive until such time that Congress can intervene. The American Psychiatric Association and various Human Rights Organizations seem

to have omitted all reference to stalking, mind-control experimentation, and terrorization upon the human psyche. Typically the victims who complain of being “zapped by radio waves” and of “hearing voices” are stigmatized as psychotic, delusional or schizophrenic.

Overt Harassment which is meant to be observed, may be intended to “precondition” victims for long-term utilization. Individuals terrified by unexplained overt harassment are unable to cope with the sudden onset of the events. This phased pattern of harassment is apparent in all cases that the projected investigated, and the objective seems to be to maintain longterm extremes of stress. Individuals who try to help electronic victims, suggest delusional loss of control and are not exempted from this type of surveillance. Sudden, bizarre-rude treatment, sleep-disruption deprivation, isolation and acts of harassment and alienation by formerly friendly acquaintances. This tactic surfaces when individuals exhibit strong emotional and irrational responses to other forms of treatment do not achieve the desired response. The conference concluded that similar intent to divide and isolate the populace, were employed precisely on a recurrent basis both in the Soviet Union and the United States by the KGB and FBI. The project concluded that the KGB was “accomplishing more in “burying this country” from within, than it could ever have hoped to have achieved as an institution. It would appear that this country has a serious problem on its hands which needs to be resolved”. The refusal of the FBI to intervene in these cases were addressed by the project. FBI spokesmen acknowledged that they had reviewed a large number of requests for assistance from people who believed that they were being “zapped by radio waves” and/or are “hearing voices...” “from Mars, that is”. It is apparent that the FBI at least acknowledges the existence of this type of surveillance. The individual in question furnishes acquired evidence to the local authorities, who make it clear that they

are not participating in this activity. Amnesty International has recently intervened in cases involving electronic devices that mimic the effects of directed-energy weapons.

(*Microwave harassment and Mind-Control Experimentation*, Julianne Mckinney, ”Electronic Surveillance” Project National Security Alumni 1992.)

Auditory Experience Hallucinatory or Physical?

The sounds heard in ordinary everyday sense experience are usually taken without question to be “real” events, the result of objective air waves in the physical world. The idea that the sounds we hear could have any other internal mental cause other than being emitted from an existing physical cause, in other words hallucinatory, seldom comes up except in connection with abnormal mental states. The judgement that a given experience should be classified as unreal is usually based on being unable to confirm an existing cause for its occurrence. The determination that an external cause is lacking is usually derived without the knowledge of how to classify auditory effects with certainty. Auditory effects are sometimes the most difficult of the sense modalities to classify with certainty, since their causes are temporary and belong to the inception of sound. If one hears his name called by a voice that one recognizes and yet the individual proves to be miles away, people would say, that is impossible. If one hears a bell from a distance, it is difficult to say whether it was cracked or even rang at all. If the person was experiencing a crisis at the time, the call would seem in effect to be a message, relating to the crisis, and the experience would be classified as an apparition.

Classically the auditory and visual systems have been distinguished by their response to different type of energy, acoustic and electromagnetic, respectively, sound energy is generated by vibrating bodies and is transmitted by motion in the medium air, water, wood ect. In contrast to this, the visual system responds to electromagnetic energy. In 1975 the U.S. Department of Health, Education and Welfare

reported in “Biological Effects of Electromagnetic Waves” that microwaves at very low power densities can act psychophysiologically if properly modulated, and that certain unscrupulous governments (not named) were clandestinely involved in mind control thereby. Certain modulated radio frequency or microwave fields can be used to directly program verbal information into the brain via extraordinary auditory and extravisual pathways. Elaborate experiments have been designed to demonstrate the effects of “microwave hearing”. In 1981 the Naval Surface Weapons, Office of Non-Lethal Weapons worked on developing electromagnetic devices for the purpose including “riot control” and hostage removal. Direct communication of speech via appropriate modulation has been demonstrated by Sharp and Grove (See Justesen 1975), researchers at Walter Reed Army Institute. The ability to produce auditory hallucinations or microwave hearing, or neurological disorders, during which the person can hear tones that seem to be coming within. Subtle behavioral changes which may be evolved by a low-level electromagnetic field. Coding is reportedly influenced by the character of the signal and is a function for example of the shape and amplitude of the pulse or waveform. Dr. Sharp conducted experiments in which the human brain has received a message carried to it by electromagnetic transmission, and is able to recognize spoken words that were modulated on a microwave carrier frequency by an “audiogram”, an analog of the ‘words’ sound vibrations, and carried into their heads. They used a tape recorder to record each of the single syllable words for digits between one and ten. Then they converted the speech wave-forms of each word to digital signals in such a fashion that each time an analog speech wave crossed the zero reference in the negative direction, a transmitter would emit a short pulse of microwave energy. Sharp and Grove reported that when they radiated themselves with the “speech modulated” energy,

they were able to hear, identify, and distinguish the words tested. The capability to communicate directly with humans in this manner is obviously not limited to therapeutic and behavioral investigations predictable and exploitable effects.

(Microwave Auditory Effects And Applications, James C. Lin Ph.D, page 176.)
(Auditory System Response to Radio Frequency Energy, Allan H. Frey)
(Biological Effects of Electromagnetic Waves, U.S. Department of Health, Education and Welfare
page 9, October 20-23 1975 – HEW Publication (FDA) 77-8010)

Advances in Neuroscience May Threaten Human Rights.

The French Bioetics Committee concluded recently that neuroscience is increasing posing a potential threat to human right. A researches from the Atomic Energy Commission told the meeting that the use of imaging techniques has reached the stage where “we can almost read peoples thoughts”. The committee is taking this threat serious enough to launch a study to recommend possible precautions. One of the issues is the legal question of whether criminals are responsible for their actions. Another concern was the prediction that an increase in defense arguments based on irresponsibility due to a genetic predisposition to certain types of behavior might exist. Understanding the working of the human brain was considered to become one of the most ambitious disciplines of the future.

(Nature, Vol 391, 22 January 1998, “News” page 316)

Radio Mind Disturbances in Finland.

The following report claiming neurotelecontrolphenomena (such as perceiving ‘controllers voices’) was submitted by the “Against Mind Control” group and their publication. In light of what appears to be occurring in other nations it may be plausible.

The chaos of neuroteleanarchy that broke out as a result of both, anti-neurotelecontrol-resistance and disinformation neurotelcasting, implied that some of the members of parliament were carriers of neuroimplants. “The neurotelecast transmission spread through the electrically unprotected walls of Parliament House supposedly guided by the resistance. The members of parliament were heard giving unclear and irrational statements, also noticeable forced movements were observed. The report describes one person’s perception of what seems to be occurring. The streets are constantly in the thick atmosphere of neurocontrol. Thousands of young men are frequently heard shouting synchronously for extended periods. This is due to neurotelecasting acting like and creating an influence and

power that seeks to dominate over public opinion that has enslaved thousands of young people. “The stunt, mixture of random motoric and cognitive components in the neurotelcastting signals create a distinct atmosphere of electromagnetic soup of psychological warfare. Religious ‘necromance’ controllers, make their way in the city center and their neuropresence of behavioral modification adds up to the moods and wonders of citizens”. Provoking victims to violence with neurotelecontrol also occurs. Frequent shouting and demonstrations regarding neuroradiocontrol goes on all the time. Many types of disturbances transmitted via neuroradio are prominent in the atmosphere”. In a Bank a teller was attacked by a neurocontrolled anarchist who focused on both the personnel and the clients. The attack took place on 2.3.1998 09:30. “Brainradio is criminal”, the clerk was heard shouting. A considerable nausea was induced and she felt ill for a few minutes unable to serve the customers. A civil crime report made to police ‘gave no reason for further investigations’. The complaintant presented the document of police officials statement their not continuing the investigations. He witnessed the behavior of the police officials clearly affected by neurotelecontrol. He described the effect as both distinctly synchronous, small, forced movements of the policemen and synchronous resitation like disturbance of speech, which reflected the content perceived himself as neuroradiosignal induced. The victim describes his own symptoms. “*I heard a voice of an unknown man giving me instructions on how to act…. I realized that I don’t have that kind of internal voice naturally.. then his tone and presence changed... and the voice and the effect of the radio became more perceivable... I think his intention was to talk directly into the stream of consciousness and to cause subliminal influence fore there were emotions that were evoked by his words. Later on I found out there are neurotechnological applications such as*

psychotronics that are used for mind control and altering the psyche".
Radio Mind Disturbances to the Work of Members of the Parliment of Finland. 7.1.1998. (Neuroradio Publicist News, Helsinki 7.3.1998 Against Mind Control)

Freedom of the Mind:

An International Safeguard to Intrusions Into The Thought Processes

In spite of various United Nations provisions which guarantee ”the free development of personality and the personal integrity of individuals, no state is expressly precluded from altering the mental processes of its nationals”. The very citadel of liberty, the human mind, is continually under siege and surveillance. Overwhelming evidence supports the fact that technology is constantly developed for the purposes of manipulation and control of the psyche and personality, altering the way people think, controlling a person’s private thoughts, or preventing a person from having thought of his own.

The government need not alter the mental process of everyone in order to exert control over an entire population. This method of control is primarily surveillance, and results in a doctrine of humanitarian intervention that is constantly directed at a small number of dissident or key persons, and through this process the public underestimates the power and potential of the governing agency.

When it comes to human rights protection of freedom of the mind, the world cannot afford to be in defensive position. In this regard the future of the free independent mind depends upon how the human right community responds to the increasing and unchecked development of human modification techniques. What is unlawful mind control, and how is it distinguished from prejudice and inclination and what are appropriate sanctions and enforcement procedures. Such practices result in

suppression of dissent in a manner that stifles contrary public opinion and maintains the status quo.

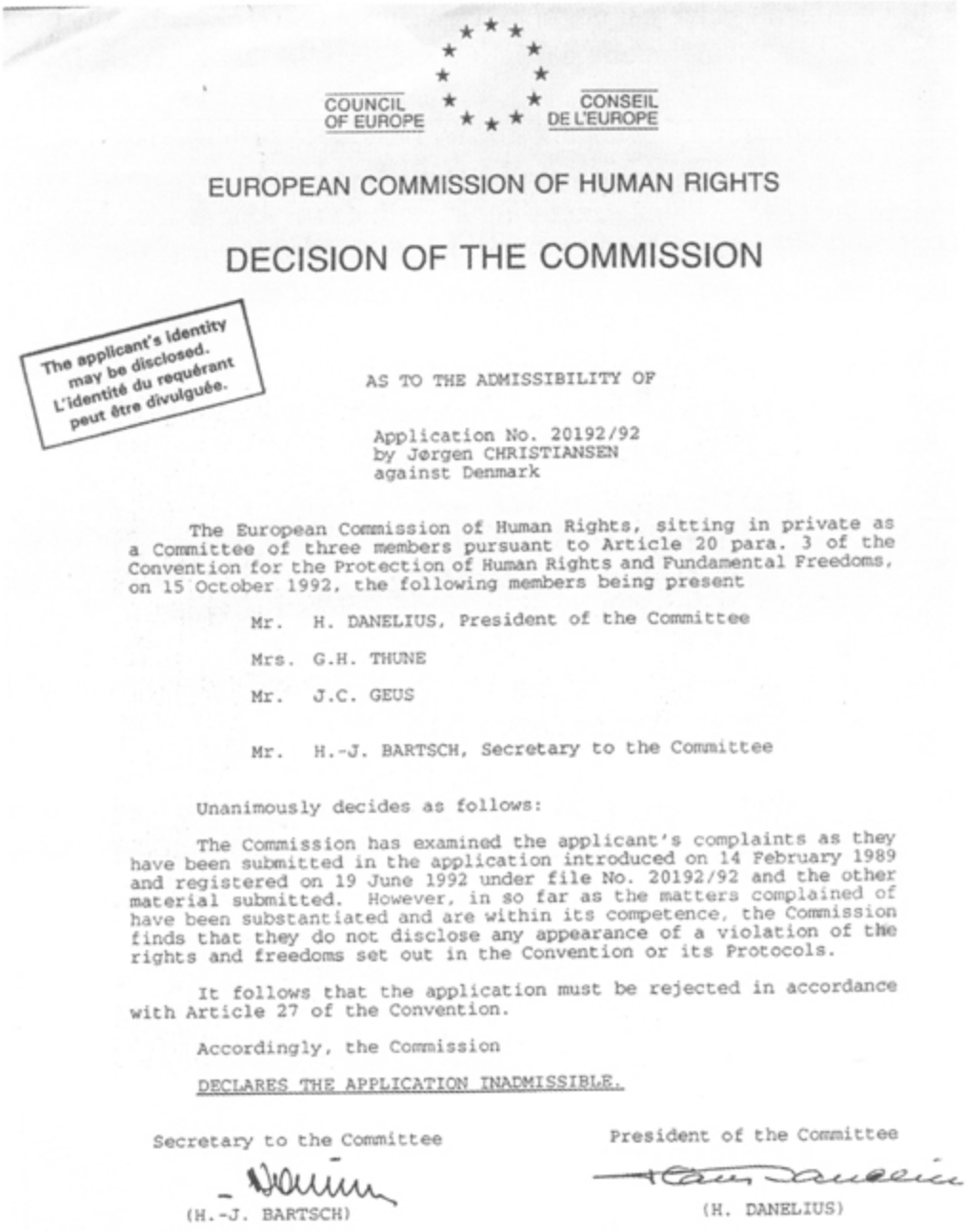
The government cannot constitutionally premise legislation on the desirability of controlling a person's private thoughts. It is a principle that needs international ratification and enforcement to make meaningful the language of the Universal Declaration of Human Rights which guarantees "the free development of the personality". Such a right would impose an express prohibition upon states, requiring them to abstain from intervention into certain thought processes of the individual while altering the social process of society, and adopting the correct point of view. The personality of an individual that ought to reign uncontrolled either by any other individual or by the public collectively. The right that a person has by virtue of the fact that they are human. People should have a place to complain to when they are being tortured for prolonged periods. To be human is to be one self. While it is a vital human right for everyone to be "equal before the law", without suggesting to us that everyone is identical. Human rights foremost should protect the right of one's own self. To dehumanize any one of us would threaten all the rest of us.

"The mind is the heart of liberty, its last stronghold. It is because that stronghold is hidden and beyond the reach of any dictation that liberty grows irresistibly in strength".

The future of freedom of the mind depends on dissemination of ideas inimical to the public morality, which is constantly changing. The price is freedom, freedom of the mind, is our precious human right.

Freedom of the Mind As An International Human Rights Issue, Allan Scheflin, Human Rights Law Journal Vol 3, 1982)

Mental Privacy, An International Safeguard to Governmental Intrusions into the Mental Processes, California Western International law Journal 110,1975)



COUNCIL OF EUROPE — CONSEIL DE L'EUROPE

EUROPEAN COMMISSION OF HUMAN RIGHTS

DECISION OF THE COMMISSION

The applicant's identity may be disclosed.
L'identité du requérant peut être divulguée.

AS TO THE ADMISSIBILITY OF

Application No. 20192/92
by Jørgen CHRISTIANSEN
against Denmark

The European Commission of Human Rights, sitting in private as a Committee of three members pursuant to Article 20 para. 3 of the Convention for the Protection of Human Rights and Fundamental Freedoms, on 15 October 1992, the following members being present

Mr. H. DANELIUS, President of the Committee

Mrs. G.H. THUNE

Mr. J.C. GEUS

Mr. H.-J. BARTSCH, Secretary to the Committee

Unanimously decides as follows:

The Commission has examined the applicant's complaints as they have been submitted in the application introduced on 14 February 1989 and registered on 19 June 1992 under file No. 20192/92 and the other material submitted. However, in so far as the matters complained of have been substantiated and are within its competence, the Commission finds that they do not disclose any appearance of a violation of the rights and freedoms set out in the Convention or its Protocols.

It follows that the application must be rejected in accordance with Article 27 of the Convention.

Accordingly, the Commission

DECLARES THE APPLICATION INADMISSIBLE.

Secretary to the Committee

(H.-J. BARTSCH)

President of the Committee

(H. DANELIUS)

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